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Proceedings
OF THE
CONNECTICUT
STATE MEDICAL SOCIETY
1906

114th Annual Convention

HELD AT
NEW HAVEN MAY 23d and 24th

EDITOR

WALTER R. STEINER

ASSISTANTS

WILLIAM H. CARMALT

NATHANIEL E. WORDIN

PUBLISHED BY THE SOCIETY

The Connecticut State Medical Society does not hold itself responsible for the opinions contained in any article unless such opinions are endorsed by special vote. All communications intended for the Connecticut State Medical Society must be addressed to Walter R. Steiner, M.D., Hartford, Conn.

The next annual meeting of the Connecticut State Medical Society will be held in Hartford, May 22d and 23d, 1907.

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1906

TABLE OF CONTENTS.

| | Page. |
|----------------------------------------------------------------------------------------------------|-------|
| Officers of the Society, 1906-1907, | 6 |
| Members of the House of Delegates, 1906, | 7 |
| Committees of the Society, 1905-1906, | 8 |
| Minutes of the House of Delegates, | 9 |
| Report of the Secretary, | 9 |
| Report of the President, | 15 |
| Report of the Chairman of the Council, | 18 |
| Reports of the Councilors: | |
| (a) Hartford County, | 23 |
| (b) New Haven County, | 23 |
| (c) New London County, | 25 |
| (d) Fairfield County, | 26 |
| (e) Windham County, | 27 |
| (f) Litchfield County, | 28 |
| (g) Middlesex County, | 28 |
| (h) Tolland County, | 30 |
| Report of the Treasurer, | 31 |
| Report of the Committee on Public Policy and Legislation, | 32 |
| Report of the Committee on Medical Examinations, | 35 |
| Report of the Committee on Scientific Work, | 42 |
| Report of the Committee on Honorary Members and Degrees, | 45 |
| Report of the Committee on Arrangements, | 46 |
| Report of the Committee on Prevention of Venereal Diseases, | 47 |
| Report of the Committee on a Colony for Epileptics in Connecticut, | 49 |
| Report of the Committee to Prepare a Pamphlet on Vaccination, | 50 |
| Report of the Member of the National Legislative Council, | 51 |
| Report of the Delegates to the American Medical Association, | 53 |
| Election of Honorary Members, | 54 |
| Resolution Concerning Psychopathic Wards in General Hospitals, with Committee Appointed, | 55 |
| Report of the Special Committee, | 56 |
| Resolution Concerning the Prevention of Typhoid Fever, | 59 |
| Nominations by the Council, | 61 |
| By-Laws Amended, | 65 |
| Tax for County Secretaries and the County Associations, | 65 |
| Appropriation for a Memorial to Dr. N. S. Davis, | 66 |
| Banquet, | 67 |
| Charter and By-Laws, | 70 |
| President's Address, | 87 |

Scientific Programme.

| | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Papers on Special Subjects, | 105 |
| The Need of Psychopathic Wards in General Hospitals, A. R. Dieffendorf, Middletown, | 107 |
| Discussion, | 111 |
| Bacterial Immunity, Charles J. Bartlett, New Haven, | 115 |
| Discussion, | 127 |
| Aphonia, Carl E. Munger, Waterbury, | 129 |
| Discussion, | 132 |
| On the use of the Urethroscope in Diagnosis, Charles S. Stern, Hartford, | 137 |
| Discussion, | 143 |
| Acne, Mark S. Bradley, Hartford, | 146 |
| Discussion, | 150 |
| Surgical Papers, | 155 |
| Observations on the General Treatment of Fractures, Ansel G. Cook, Hartford, | 157 |
| Discussion, | 161 |
| Further Observations on Gastric Surgery, H. M. Lee, New London, | 165 |
| Discussion, | 171 |
| Intestinal Anastomosis, with Special Reference to the Murphy Button, Leonard C. Sanford, New Haven, | 177 |
| Discussion, | 188 |
| Tuberculous Peritonitis, John B. Boucher, Hartford, | 191 |
| Discussion, | 199 |
| Medical Papers, | 203 |
| Arterio-Sclerosis, with Especial Reference to the Blood Pressure Changes in this Condition, and the use of the Sphygmometer for Determining the Pressure in Routine Practice, William Porter, Jr., Hartford, | 205 |
| Discussion, | 219 |
| The Home Treatment of Tuberculosis, David R. Lyman, Wallingford, | 221 |
| Discussion, | 228 |
| Roentgenization in the Treatment of Cancer, Clarence Edward Skinner, New Haven, | 235 |
| Lacerations of the Parturient Canal, their Prevention, and Immediate Treatment, Norton R. Hotchkiss, New Haven, | 247 |
| Discussion, | 252 |
| The Relation of Typhoid Fever to Pregnancy and the Puerperium, Otto G. Ramsay, New Haven, | 256 |
| Discussion, | 261 |
| Papers Read at County Meetings, | 263 |

Obituaries.

| | |
|-------------------------------------------------------------------------------------|-----|
| Henry Putnam Stearns of Hartford, by Gurdon W. Russell, of Hartford, | 273 |
| William Turner Bacon of Hartford, by Harmon G. Howe, of Hartford, | 281 |
| Jarvis King Mason of Suffield, by Edward F. Parsons, of Thompsonville, | 284 |
| Stephen Grosvenor Hubbard of New Haven, by John Nicoll, of New Haven, | 287 |
| Charles A. Lindsley of New Haven, by William H. Carmalt, of New Haven, | 292 |
| Evelyn Lyman Bissell of New Haven, by Charles E. Park, of New Haven, | 298 |
| Theodore Edward Beard of New Haven, by Frederick N. Sperry, of New Haven, | 300 |
| John Slade Ely of New Haven, by T. Mitchell Prudden, of New York, | 301 |
| Daniel Meigs Webb of Madison, by Reynolds Webb Wilcox, of New York, | 306 |
| Curtis Harvey Bill, of Bridgeport, by George L. Porter, of Bridgeport, | 308 |
| George Beriah Bouton of Westport, by Lauren M. Allen, of South Norwalk, | 312 |
| Lowell Holbrook of Thompson, by J. B. Kent, of Putnam, | 314 |
| Roger Charles Downey of Middletown, by Arthur J. Campbell, of Middletown, | 317 |

Members of the Society.

| | |
|-------------------------------------------------------------------------------------|-----|
| Honorary Members, | 319 |
| Active Members by Counties with Post Office Address, | 320 |
| List of Former Officers of the Society, | 335 |
| Alphabetical List of Living Members with Degrees, and Date of Graduation, | 337 |

OFFICERS OF THE SOCIETY.

1906-1907.

President.

WILLIAM L. HIGGINS, South Coventry.

Vice-Presidents.

CHARLES E. BRAYTON, Stonington.

SAMUEL D. GILBERT, New Haven.

Secretary.

WALTER R. STEINER, Hartford.

Treasurer.

JOSEPH H. TOWNSEND, New Haven.

HOUSE OF DELEGATES.

COUNCILORS.

HARTFORD COUNTY.

GEORGE R. SHEPHERD.

NEW HAVEN COUNTY.

CHARLES J. FOOTE.

NEW LONDON COUNTY.

JOHN G. STANTON.

FAIRFIELD COUNTY.

WILLIAM H. DONALDSON.

WINDHAM COUNTY.

SELDEN B. OVERLOCK.

LITCHFIELD COUNTY.

GEORGE H. KNIGHT.

MIDDLESEX COUNTY.

FRANK K. HALLOCK.

TOLLAND COUNTY.

WILLIAM L. HIGGINS.

DELEGATES.

HARTFORD COUNTY.

Everett J. McKnight.

Ansel G. Cook.

George W. Lawrence.

John W. Felty.

John B. Boucher.

Kenneth E. Kellogg.

NEW HAVEN COUNTY.

Gustavus Eliot.

Frederick N. Sperry.

Norton R. Hotchkiss.

Ernest H. Arnold.

Henry G. Anderson.

Thomas M. Bull.

Frederick G. Graves.

NEW LONDON COUNTY.

Harry M. Lee.

William H. Gray.

FAIRFIELD COUNTY.

Thomas L. Ellis.

D. Chester Brown.

J. Reed Topping.

Francis I. Nettleton.

William S. Randall.

WINDHAM COUNTY.

Charles C. Gildersleeve.

Henry L. Hammond.

LITCHFIELD COUNTY.

Philip H. Sellew.

Elias Pratt.

MIDDLESEX COUNTY.

Miner C. Hazen.

Arthur B. Coleburn.

TOLLAND COUNTY.

Ernest O. Winship.

STANDING COMMITTEES.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION.

| | |
|----------------------|---------------------|
| Everett J. McKnight. | Selden B. Overlock. |
| Charles S. Rodman. | Elias Pratt. |
| Harold H. Heyer. | Frank K. Hallock. |
| John W. Wright. | William L. Higgins. |

The President. The Secretary.

COMMITTEE ON MEDICAL EXAMINATIONS.

| | |
|-------------------|--------------------|
| Horace S. Fuller. | Walter L. Barber. |
| J. Francis Calef. | Charles A. Tuttle. |

Samuel M. Garlick.

COMMITTEE ON SCIENTIFIC WORK.

| | |
|-----------------|----------------------|
| Gustavus Eliot. | Everett J. McKnight. |
|-----------------|----------------------|

The Secretary.

COMMITTEE ON HONORARY MEMBERS AND DEGREES.

| | |
|--------------------|---------------------|
| Oliver T. Osborne. | Charles E. Stanley. |
|--------------------|---------------------|

Charles C. Gildersleeve.

COMMITTEE OF ARRANGEMENTS.

| | |
|-------------------|----------------------|
| B. Austin Cheney. | Charles J. Bartlett. |
|-------------------|----------------------|

Harry L. Welch.

SPECIAL COMMITTEES.

COMMITTEE TO CONSIDER THE BEST METHODS OF PUBLIC CONTROL AND PREVENTION OF VENEREAL DISEASE.

| | |
|---------------------|-----------------------|
| Ralph A. McDonnell. | William H. Donaldson. |
|---------------------|-----------------------|

COMMITTEE ON A COLONY FOR EPILEPTICS IN THE STATE.

| | |
|----------------------|-------------------|
| Max Mailhouse. | Edwin A. Down. |
| Allen R. Diefendorf. | Frank K. Hallock. |

The President.

COMMITTEE ON VACCINATION.

| | |
|---------------------|----------------------|
| William L. Higgins. | Everett J. McKnight. |
|---------------------|----------------------|

Wyeth E. Ray.

COMMITTEE ON NATIONAL LEGISLATION.

Elias Pratt.

MINUTES OF THE HOUSE OF DELEGATES.

The first meeting of the House of Delegates was called to order on Wednesday, May 23d, at 12 o'clock, at Harmonie Hall, by the President, Dr. N. E. Wordin, of Bridgeport. There were present, Dr. George R. Shepherd, Dr. Charles J. Foote, Dr. William H. Donaldson, Dr. Selden B. Overlock, Dr. George H. Knight, Dr. Frank K. Hallock, and Dr. William L. Higgins (councilors), and Dr. Everett J. McKnight, Dr. Ansel G. Cook, Dr. George W. Lawrence, Dr. John W. Felty, Dr. John B. Boucher, Dr. Kenneth E. Kellogg, Dr. Gustavus Eliot, Dr. Norton R. Hotchkiss, Dr. Henry G. Anderson, Dr. Harry M. Lee, Dr. William H. Gray, Dr. D. Chester Brown, Dr. J. Reed Topping, Dr. Francis J. Nettleton, Dr. William S. Randall, Dr. Charles C. Gildersleeve, Dr. Henry L. Hammond, Dr. Philip H. Sellew, Dr. Elias Pratt, Dr. Miner C. Hazen, Dr. Arthur B. Coleburn, and Dr. Ernest O. Winship (delegates). The following reports were then read and accepted.

(1) Report of the Secretary, Dr. Walter R. Steiner (Hartford).

Report of the Secretary.

Mr. President and Gentlemen of the House of Delegates:

We are just completing the first year under our revised charter and by-laws, which has joined us by a closer bond of union with the American Medical Association. We trust our members, on account of this new era, will show a renewed love and interest in this society by attending its meetings as regularly as possible and doing all that in them lies for furthering the unity, peace, and concord which should knit us all into one harmonious body. With a firm, united stand, let us strive to "federate and bring into one compact organization the entire medical profession of the State of

Connecticut, and to unite with similar societies of other States to form the American Medical Association; to extend medical knowledge and advance medical science; to elevate the standard of medical education, and to secure the enactment and enforcement of just medical laws; to promote friendly intercourse among physicians; to guard and foster the material interests of our members, and to protect them against imposition; and to enlighten and direct public opinion in regard to the great problems of State medicine, so that the profession shall become more capable and honorable within itself and more useful to the public, in the prevention and cure of disease, and in prolonging and adding comfort to life." With such high aims, recorded in our by-laws and sealed by a determination among ourselves to make them effectual, the useful future of our society is assured.

The past year has shown some very noticeable changes in our membership. We have lost some members whose presence and council have been of great value to the society at former meetings. Two had occupied the presidential chair. Our total number of members at present is 780, distributed as follows:

| | | |
|---------------------|-------|-----|
| Hartford, 1905, | 189 | |
| New members, | 12 | |
| Reinstated, | 1 | |
| Transferred, | 2 | |
| | <hr/> | |
| | 204 | |
| Left the State, | 3 | |
| Left the County, | 1 | |
| Died, | 3 | |
| | <hr/> | |
| | 7 | |
| Present membership, | | 197 |
| A gain of 8 | | |
| New Haven, 1905, | 219 | |
| New members, | 12 | |
| | <hr/> | |
| | 231 | |

| | | |
|---------------------|-------|-----|
| Transferred, | 1 | |
| Died, | 6 | |
| | <hr/> | |
| | 7 | |
| Present membership, | | 224 |
| A gain of 5 | | |
| New London, 1905, | 52 | |
| New members, | 3 | |
| | <hr/> | |
| | 55 | |
| Present membership, | | 55 |
| A gain of 3 | | |
| Fairfield, 1905, | 142 | |
| New members, | 5 | |
| Transferred, | 1 | |
| | <hr/> | |
| | 148 | |
| Died, | 2 | |
| Present membership, | | 146 |
| A gain of 4 | | |
| Windham, 1905, | 38 | |
| New members, | 2 | |
| Transferred, | 1 | |
| | <hr/> | |
| | 41 | |
| Left the State, | 1 | |
| Transferred, | 1 | |
| Dropped, | 2 | |
| Died, | 1 | |
| | <hr/> | |
| | 5 | |
| Present membership, | | 36 |
| A loss of 2 | | |

| | | |
|---------------------|-------|----|
| Litchfield, 1905, | 57 | |
| New members, | 2 | |
| | <hr/> | |
| | 59 | |
| Transferred, | 1 | |
| Left the County, | 1 | |
| | <hr/> | |
| | 2 | |
| Present membership, | | 57 |
| Middlesex, 1905, | 44 | |
| New members, | 1 | |
| Transferred, | 1 | |
| | <hr/> | |
| | 46 | |
| Left the State, | 2 | |
| Present membership, | | 44 |
| A loss of 1 | | |
| Tolland, 1905, | 18 | |
| New members, | 3 | |
| | <hr/> | |
| | 21 | |
| Present membership, | | 21 |
| A gain of 3 | | |

Our present membership represents a gain of 22 over last year, and, with the 23 honorary members, brings our total number up to 803. Hartford and New Haven Counties have added the most new members, 12 being noted in each; Fairfield comes next with 5, New London and Tolland with 3, Windham and Litchfield with 2, and Middlesex with 1. The names of the new members, with graduation and places of residence, are:

Edward Alfred Hotchkiss, McGill Univ., 1904, Collinsville.

Noah Arthur Burr, Yale, 1901, Manchester.

Mark Spalding Bradley, P. & S., N. Y., 1892, Hartford.

Harry Colman Clifton, Univ. Pa., 1901, Hartford.

- Richard Ambrose Outterson, Jefferson, 1902, Windsor Locks.
 Robert Sythoss Starr, P. & S., N. Y., 1901, Hartford.
 Catherine Hutchison Travis, Johns Hopkins, 1903, New Britain.
 Arthur Carl Heublein, P. & S., N. Y., 1902, Hartford.
 John Law Bridge, Harvard, 1903, Thompsonville.
 Ralph Benjamin Cox, McGill Univ., 1902, Collinsville.
 Harry Kolman Loew, P. & S., N. Y., 1902, Hartford.
 William Myron Stockwell, Univ. Pa., 1904, Suffield.
 Nelson Amos Ludington, Yale, 1901, New Haven.
 Dwight Milton Lewis, Johns Hopkins, 1901, New Haven.
 Seymour Leopold Spier, Yale, 1904, New Haven.
 John Edward Farrell, N. Y. Univ., 1903, Waterbury.
 William Hill Bean, Yale, 1903, New Haven.
 Charles Engelke, P. & S., N. Y., 1902, Waterbury.
 Louis Frederick Wheatley, Tufts, 1903, Meriden.
 John George Hugo, P. & S., Balt., 1903, New Haven.
 Thomas Joseph McLarney, P. & S., Balt., 1897, Waterbury.
 Edward Reed Whittemore, P. & S., N. Y., 1902, New Haven.
 Edward O'Reilly Maguire, P. & S., N. Y., 1898, Derby.
 Charles Ambrose Bevan, Med. Chir., Phila., 1887, West Haven.
 Francis Winthrop Pyle, P. & S., N. Y., 1902, Bridgeport.
 Harriet Baker Hyde, Michigan Univ., 1900, Greenwich.
 Eli Butler Ives, Yale, 1903, Bridgeport.
 Francis Irwin Burnell, L. I. Coll. Hosp., 1894, South Norwalk.
 Richard Matthew English, Yale, 1898, Danbury.
 Charles Flagg Whitney, Univ. Vt., 1903, Norwich.
 Joseph Matthew Ganey, P. & S., Balt., 1904, New London.
 Edwin Atkinson, Univ. Vt., 1893, Niantic.
 Cyrus Henry Pendleton, Western Reserve, 1860, Hebron.
 Cyrus Edmund Pendleton, Yale, 1903, Hebron.
 Willard Nelson Simmons, Univ. Vt., 1889, Tolland.
 Edward Franklin Perry, L. I. Coll. Hosp., 1897, Putnam.
 Emilien Rock, Victoria School, Montreal, 1889, North Grosvenor
 Dale.
 William George Reynolds, Yale, 1887, Woodbury.
 Howard Granson Stevens, Balt. Med., 1904, West Cornwall.
 Edward Gould Rowland, Balt. Med., 1903, Westbrook.

The largest gain of the County Associations is seen in Hartford County, with a net gain of 8; New Haven comes next with 5, then Fairfield with 4, and Tolland and New London with 3. Windham has suffered a loss of 2 in its membership, and Middlesex a loss of 1. Litchfield County has remained stationary. In losses by death New Haven comes first with 6, Hartford next with 3, Fairfield with 2, and Windham with 1, while New London, Litchfield, Tolland, and Middlesex report none.

In July, 1905, in accordance with instructions, I deposited for safe keeping, with the Connecticut Mutual Life Insurance company, the two early volumes of our minutes, and received a receipt for them from Dr. George R. Shepherd, who had previously, on behalf of the company, made the offer for the books' preservation. In February, of this year, Mr. George S. Godard, the State librarian, wrote to me offering to accept in trust these records of our Society and deposit them in the vaults of the State library. I consequently recommend that this change be made in the disposition of these volumes.

It is important that the bonds between the County Associations and the State Society be somewhat closer drawn, as we are now a more component part of the American Medical Association. For this purpose I propose that the County Secretaries make semi-annual reports, after their spring and fall meetings, instead of annual ones after their spring meetings, and keep the State Secretary informed in the meantime of any changes in their organizations, by cards, which the American Medical Association have had printed for us.

The seal of this society was made when the word State was not a part of our official designation. I consequently recommend that a new seal be made, and that a committee be appointed for this purpose.

The Hartford County Secretary has prepared a card index of the members of his County Association. It is important that the Secretaries of other County Associations also take up this matter and likewise assist the State Secretary in preparing a card index of our members for use in his office, as well as a list of the non-affiliated physicians in the State, both of which are required by our revised by-laws. In making up a card for the members' index it seems to

me that it would be well to include enough biographical material so that, if ever the opportunity for preparing a biographical directory of our members should present itself, we should have the data on hand for the purpose. To this end the application blanks for membership in each County Association should be revised to include the proper amount of material which could finally be sent, after the applicant is elected, to the State Secretary, and placed by him upon the proper card. I suggest that a committee be formed to consider this matter.

Respectfully submitted,

WALTER R. STEINER, Secretary.

Discussion.

The President: There are some suggestions made in this report. Have you anything to offer regarding them?

Dr. E. J. McKnight (Hartford): I move that a committee of three be appointed by the chair to consider those matters which the Secretary has recommended in his report and that they report at the meeting tomorrow morning. Motion adopted.

The President: I would nominate as that committee Dr. E. J. McKnight (Hartford), Dr. Frank K. Hallock (Cromwell), and Dr. W. S. Randall (Shelton).

(2) Report of the President, Dr. Nathaniel E. Wordin (Bridgeport):

Report of the President.

House of Delegates of the Connecticut State Medical Society — Gentlemen:

The Connecticut State Medical Society is certainly to be congratulated on the opening of this, its one hundred and fourteenth annual meeting. For the first time we come together with Board of Councilors and House of Delegates, in closer touch with the societies of other States and the National organization, in the front of the medical movement of the twentieth century. It is hoped that our business may be wisely and quickly done, that our scientific work may be helpful and attractive, and that our professional ties may be strengthened.

We shall carry on our sessions today with some difficulty, because everything is new. We have no precedents to fall back upon. We shall have to establish them.

While our by-laws are comprehensive, and, for the most part, easily understood, they are silent concerning the detail of certain duties which will devolve upon us. Among these are the election of honorary members and the election of our own officers. You will determine by your action whether you will nominate honorary members from the floor or whether you will have a standing committee for the purpose. But I suggest that some arrangement be made which shall secure for us the election of two or three honorary members each year. Similarly in the election of officers and delegates. Action should be uniform from year to year in such an important matter. It seems to me eminently fitting that the Board of Councilors should be made the Nominating Committee who should present to your body at the time appointed for the election, one or more candidates for each of the offices to be filled. This will place the matter in the hands of a body of conservative men of experience and judgment who are not likely to be influenced by political methods, and who, meeting from time to time during the year, will have this duty constantly before them: moreover, every County in the State will have a representation.

I suggest that Chapter V, Section 4, of the By-laws, be amended by striking out the word "preceding," before the word "section," and inserting the word "one" after it, so that it shall read, "but no delegate shall be eligible to any office named in Section 1." I suggest further, that Chapter VIII, Section 1, be amended by inserting after the words, "A Committee on Public Policy and Legislation," the words, "A Committee on Medical Examinations," and that Section 4 should read, "The Committee on Medical Examinations shall consist of five members, who shall be appointed in accordance with Section 4717 of the Statute known as the Medical Practice Act. The Committee shall conduct the medical examinations of candidates for certificates of qualifications for license to practice medicine in the State in accord with the requirements of the Medical Practice Act. It shall annually present a written report to the House of Delegates. The Committee shall also be a Committee on Medical Education, and shall co-operate

with the Council of Education of the American Medical Association in the effort to elevate the standard of medical education in the United States."

Section 4 should be numbered Section 5.

The Committee on Medical Examinations has heretofore been only a creation of the State, through its Legislature, and, although its origin was in and its work for the Society, the Society has never adopted it by any act of its own. This it ought to do. The Committee as it now exists has no official connection with the Society, and hence the Society has no authority over it, should any be desired.

During the month of March, last, I have had correspondence with Dr. A. P. Colwell, assistant secretary of the Council on Medical Education of the American Medical Association, with a view to the formation of such a Council for this Society. My opinion from the first has been that the objects desired would be best accomplished in our State by intrusting it to our Examining Committee. The work in each case is somewhat similar; they lie alongside of one another. Our Committee is well organized, familiar with all its requirements; above all else it is efficient. I submitted the matter to them, asking them to consider it. I received the following letter in reply:

New Haven, March 24, 1906.

My Dear Dr. Wordin:

At a meeting of the Examining Committee, held today, the matter of the Committee on Medical Education was fully discussed. The Examining Committee wishes me to express to you that it is the belief of the Committee that, as conditions exist in our State, the Committee on Medical Examination and on Medical Education should be one and the same, and that, further, it is willing to place itself at the service of the Connecticut Medical Society or its President, if he or it so desires.

Very truly yours,

C. A. TUTTLE, Secretary.

Dr. Henry O. Marcy, of Boston, an Honorary member of this Society, and personally known to many as a member of a committee

appointed to erect a memorial to Dr. Noah Davis, the founder of the American Medical Association, asks for an appropriation from this Society of two hundred and fifty dollars, in furtherance of the purpose. Too few of our profession are perpetuated in either bronze or stone.

In accordance with Chapter VI, Section 1, of the By-laws, I have been present at the meetings of the various affiliated societies. I have visited the eight counties once, and New Haven, Windham, and Litchfield twice. I have been very much pleased with the cordiality of my reception, with the earnest work of most of the societies, with the interest each takes in his own. I feel sure that the provision by which the president is required to visit the County Associations, so happily inaugurated by my predecessor, Dr. Carmalt, will be very helpful. I suggest that more attention be paid to the interchange of Delegates from the various Counties, and that arrangements be made so that no two societies shall meet upon the same day.

The President of the Board of Councilors has suggestions in his report for which I bespeak your consideration.

(3) Report of the Chairman of the Council, Dr. George R. Shepherd (Hartford).

Report of the Chairman.

Mr. President and Gentlemen of the House of Delegates:

The Board of Councilors of The Connecticut Medical Society, beg leave to offer the following report for the year 1905-6:

In the last day of the annual meeting of this Society, May 25, 1905, the Councilors, appointed by President Carmalt, met and organized by the election of Dr. George R. Shepherd as chairman, and Dr. Frank K. Hallock as clerk. Four meetings have been held during the past twelve months, at which a number of important matters have received attention.

Dr. Walter R. Steiner was appointed editor of the Transactions and Memoirs, with Doctors N. E. Wordin and William H. Carmalt as his assistants.

Eight hundred and forty-eight volumes of the Transactions for 1905 have been distributed to the members of this Society, and to others entitled to receive them, and two volumes remain on hand. The total cost of printing and distributing these eight hundred and fifty volumes has been \$1,187.63. The Secretary has in his possession a large number of the Transactions of former years, in all four hundred and sixty volumes; and the former secretary, President Wordin, writes that there are about two hundred more in his possession that are to be forwarded to the Secretary. It will evidently be necessary for the Society to provide some place for the storage of these books and papers, and we would advise that this matter be referred to the Secretary and Chairman of the Board of Councilors, with power.

The salary of the Secretary was fixed for the past year at \$150.00, the same amount as paid the previous year.

An effort has been made to arrange the dates of the spring and fall meetings of the County Associations so that they shall not conflict, thus making it possible for the President, and such delegates as may desire, to attend all the meetings. This has been partially accomplished, and can undoubtedly be arranged during the coming year.

Deeming it desirable that there should be uniformity regarding the admission of members into the Society through the County Associations, the Board of Councilors directed the Secretary to write the secretaries of each County Association, urging that a residence of twelve months in this State, and six months in the County, be required of all new members admitted, and it is hoped that this requirement will become general.

At the last annual banquet a considerable charge was made against the Society for wines, liquors and tobacco, not included in the price of \$2.50 per plate. In former years such items have been provided for from the funds paid by exhibitors, but as, by vote of the annual meeting in 1904, the practice of allowing exhibitors to be present was abandoned, there was no alternative but to authorize the payment of the bill, unless the Committee of Arrangements became personally responsible for it. The Board accordingly directed the payment of this bill, but the Committee of Arrangements for this year (1906) has been instructed not to provide malt or al-

coholic beverages, cigars or cigarettes, at the expense of the State Society.

It has become very apparent to this board that certain additions and amendments to our by-laws are urgently demanded. For example, the question was asked whether a member expelled by one of the County Associations would thereby lose his membership in the State Society, and in view of the absence of definite statement in our present by-laws, was referred to Mr. Charles E. Gross for his opinion. He says, in reply:

"I have been examining the resolution amending the charter of the Connecticut Medical Society.

"Section 2 provides that the House of Delegates, which is practically the Board of Directors, shall have power 'to establish the conditions of admission to, and dismissal and expulsion from, *said society*.'

"This relates, of course, to the Connecticut Medical Society, and not to the County societies.

"The resolution also provides, in Section 1, 'that all persons who are *now* members of the Connecticut Medical Society . . . shall be and remain a body politic.'

"The physician to whom you referred was, I understand, at the time of the passage of the resolution, a member of the Connecticut Medical Society, so that he cannot be expelled, in my opinion, from said society, except in accordance with the rules for the dismissal and expulsion, which must be formulated by the House of Delegates.

"Section 7 of the resolution provides for future members of the State Medical Society, and any one who shall be included in a 'list of members of said respective County Associations who are at the time in good and regular standing . . . shall become and be members of the Connecticut State Medical Society without further action.'

"This latter section, however, cannot reach the physician who is already a member of the Connecticut Medical Society.

"Even though he be expelled from the County Society, I do not see that that will expel him from the State Society without action in accordance with the provisions of the conditions to be formulated by the House of Delegates.

"Now, as to his standing in the County Society: The by-laws of the State Society delegate, in Chapter XII, Section 2, to each County Association the decision as to all matters of qualification of its own members.

"I should look, therefore, to the by-laws of the County Association, and if there is any provision with reference to the expulsion or dismissal of a member, the County Association can undoubtedly take advantage of those provisions and expel the physician in question.

"That, however, will not expel him from the State Society, as I have stated above."

Again, in the matter of taxation, under the old by-laws the secretaries of County Associations and certain elderly members were exempt, but no provision has been made in our present by-laws to this effect.

Consequently, when the Treasurer received the accounts from the County Associations with these deductions made, as has been for many years customary, the matter was referred to the Board of Councilors, and they have allowed these taxes to be rebated, as in accord with established precedents.

In view, therefore, of these and other features needing attention, the Board of Councilors would advise the adoption of the following amendments and additions to the present by-laws of this Society:

I. Chapter 2, Section 1, add:

"The annual tax shall be collected from all such members except the Secretaries of County Medical Associations, but the taxes of any member may be remitted by vote of the House of Delegates upon recommendation of any County Medical Association," so that it will read:

"The name of the physician on the properly certified roster of members of a component association, who has paid his annual assessment, shall be prima facie evidence of membership in this Society. The annual tax shall be collected from all such members, except the Secretaries of County Medical Associations, but the taxes of any member may be remitted by vote of the House of Delegates, upon recommendation of any County Medical Association."

II. Chapter 12, Section 3, precede by the following:

"Any County Medical Association may suspend or expel any member who is guilty of improper or unprofessional conduct, by a two-thirds vote of the members present and voting at any regular meeting, provided due notice has been given on the programme of said meeting at least ten days before its session. When from any cause a member of the Connecticut State Medical Society ceases to be a member of one of the component County Medical Associations, his membership in the Connecticut State Medical Society shall terminate, but," so that it will then read:

"Any County Medical Association may suspend or expel any member who is guilty of improper or unprofessional conduct, by a two-thirds vote of the members present and voting at any regular meeting, provided due notice has been given on the programme of said meeting at least ten days before its session. When from any cause a member of the Connecticut State Medical Society ceases to be a member of one of the component County Medical Associations, his membership in the Connecticut State Medical Society shall terminate, but any physician who may feel aggrieved by the action of the Association of his County in refusing him membership or in suspending or expelling him, shall have the right to appeal to the Council, and its decision shall be final."

III. Also that we add to Chapter 12, Section 11, to read:

"The several County Medical Associations shall have power to adjourn; to call special meetings, as they shall deem expedient; and to adopt such by-laws as they find desirable, not contrary to the laws of this State or the Charter and By-laws of the Connecticut State Medical Society."

¹ The accounts of the Treasurer have been audited and are found correct, with a balance on hand of \$929.61, and taxes due and uncollected of \$565 for last year.

The Board would advise a tax of \$3.00 per member for the ensuing year. Very respectfully submitted,

GEORGE R. SHEPHERD, Chairman.

New Haven, Conn., May 23, 1906.

Discussion.

Dr. Gustavus Eliot (New Haven): Mr. President, I move that the report of the Chairman be accepted, and that the recommendations therein, regarding changes in the constitution, be referred to the committee already

appointed by yourself to consider similar matters in the Secretary's report. I also move that the recommendations in the President's address be referred to the same committee. Motion adopted.

(4) Reports of the Councilors from the different counties in the State.

Reports of the Councilors.

(a) Hartford County, by Dr. George R. Shepherd:

Mr. President and Gentlemen of the House of Delegates:

The Councilor of the Hartford County Medical Association would respectfully report,

That: The meetings of the Association during the past year have been well attended. The scientific character of the papers presented and discussed has been of a high order and given evidence of thoughtful study and preparation. During the past year the practice of holding the sessions of the Association during the afternoon and evening, instead of morning and afternoon, as heretofore, was adopted, and has resulted in increased attendance and interest. At its last annual meeting the Association adopted such by-laws as appeared needful, and may be considered as now thoroughly organized under our new constitution. A very commendable and delightful spirit of harmony exists among the members, accompanied by sufficient friendly rivalry to stimulate the best attainments in all branches of professional effort, and the members of this Association may, I feel sure, be depended upon to do their part in carrying forward the designs of this Society and maintaining a high standard in the practice of scientific medicine.

Respectfully submitted,

GEORGE R. SHEPHERD, Councilor.

Hartford, Conn., May 23, 1906.

(b) New Haven County, by Dr. Charles J. Foote:

Mr. President and Gentlemen of the House of Delegates:

In the new Constitution the Councilor is referred to as organizer peace-maker and censor of the Society. So far as these functions are concerned, there is nothing to report from New Haven County.

There has been nothing new in organization in the New Haven County Society during the past year. There have been no quarrels to adjust, and, if not enjoying extreme peace, there has been nothing to require the interference of a peace-maker; neither have there been any indiscretions requiring an appeal to the censor.

I do not mean to imply that our organization is so perfect that there is no need for improvement, nor that we have arrived at that state of peace which is another name for indolence. There are still those healthy differences of opinion which stimulate and broaden thought, eliminate error, and bring us nearer truth.

But, though there has been no need of an organizer or peace-maker, I feel that the function of censor has a field of action. After reading over the Principles of Medical Ethics of the American Medical Association, which should be our guide of conduct, I cannot but feel that we fall short of the ideals therein presented.

Let me read from Chapter 2, part of Section 8:

"It is derogatory to professional character for physicians to dispense or promote the use of secret medicines, for if such nostrums are of real efficiency, any concealment regarding them is inconsistent with beneficence and professional liberality, and, if mystery alone give them public notoriety, such craft implies either disgraceful ignorance or fraudulent avarice. It is highly reprehensible for physicians to give certificates attesting the efficacy of secret medicines, or other substances used therapeutically."

The intent of the above section is unmistakable. There are many of these secret remedies dispensed by physicians in each county in Connecticut.

As I consider the function of councilor, the consideration of this question comes plainly before him. He should be in the forefront on this question, and should use all means to assist in the campaign against this evil. Respectfully submitted,

CHARLES J. FOOTE,
Councilor for New Haven County.

(c) New London County, by Dr. John G. Stanton:

(Read by Dr. George R. Shepherd, in the absence of Dr. Stanton.)

Mr. President and Gentlemen of the House of Delegates:

As the Councilor for New London County has not been called upon in the capacity of either organizer, peace-maker, or censor during the year, in the absence of anything of special interest during that time among the members of the New London County Society, it becomes a rather difficult problem to make a report which will either interest or instruct the members of the House of Delegates.

The year has been marked by placidity rather than by enthusiasm, and the profession has been content to pursue the even tenor of its way; sufficiently rapid to prevent stagnation, it is true, but exhibiting none of that fervor which is supposed to be necessary to set the Thames on fire. Not that conflagrations are necessary, or to be desired, but a little nerve and snap is desirable in the medical profession, as in any other, and whatever conduces to getting out of the net of daily routine is a thing greatly to be hoped and striven for. The New London County Society meets twice a year, in Norwich and New London, alternately, the regular yearly meeting on the first Thursday in April, and the semi-annual meeting on the first Thursday of October.

The semi-annual meeting, a purely literary one, was held in Norwich. There were sixteen members present, the President, a Norwich physician, being absent, however. At the regular yearly meeting, held in New London, there were fifteen members present. Fairfield County sent a delegate in the person of Dr. Robinson, of Noroton, and Hartford sent Dr. Crothers, who read an intensely interesting and instructive paper on the "Treatment of the Spirit and Drug Neuroses in Private Practice." It developed a very general discussion. The regular dissertator being absent, no other paper was read. The same dissertator was appointed for the next regular meeting, and it is hoped he will do better next year. The paucity of numbers represented at these two meetings betrays a woe-ful lack of interest, and emphasizes the need of an injection of en-

thusiasm serum into the body medical, to vivify the individual members, and to lead them to a greater personal interest in professional matters.

JOHN G. STANTON, Councilor.

New London, Conn., May 20, 1906.

(d) Fairfield County, by Dr. William H. Donaldson:

Mr. President and Gentlemen of the House of Delegates:

It gives me great pleasure to have the honor of presenting the first annual Councilor's report for Fairfield County. More especially so, because I have such a splendid body of men to report for and such pleasant matter to report. The profession numbers 269, of all kinds, of which 146 (55 per cent.) are members of our Society, and 123 are not affiliated. Of those not already members a very small proportion have the qualifications necessary to become such. It will be our earnest effort to enroll every one entitled to membership.

There is no lack of harmony, as a general good-fellowship exists in all parts of the County.

The scientific work of the members keeps well abreast of the times. Credit for this condition is largely due to the earnest, untiring, and self-sacrificing labors of the officers of the County organization, especially of the Secretary and Clerk, the latter having cleaned up the tax list, for the first time in many years, every member being now fully paid up.

Only one case has called for action by the Councilor. This was a misunderstanding between one of our members and the State Examining Committee, due to lack of proper records during the first years of the Committee's work. This was speedily and satisfactorily adjusted and will result in improved methods of recording hereafter.

We have only one standing grievance in our County, and that is the failure of the State Society to recognize in Bridgeport, the second city of the State, a suitable meeting place for our annual convention. Respectfully submitted,

W. H. DONALDSON, Councilor.

(e) Windham County, by Dr. Selden B. Overlock:

Mr. President and Gentlemen of the House of Delegates:

The Windham County Medical Society has had a prosperous year. Its meetings have been better attended than at any time before, at least during the last ten years, since the present Councilor has been a member. Dr. C. C. Gildersleeve, the retiring president, has put forth every effort to make the meetings a success, and has achieved good results. Besides contributions by members many papers have been read by well-known men from outside the society. These papers were not only full of interest, but of great practical worth to the members of the Society. The only criticism, in this connection, which can be offered is that the outside papers had better be confined to the semi-annual meeting and for this reason: at the annual meeting the business of the year must be transacted. This must, of necessity, be of no interest to the visitors, and, withal, tedious; besides, at one meeting of the year, at least, each County should depend on its own members to furnish material for the literary programme.

The visits at both the annual and semi-annual meetings of State President, Dr. Wordin, have been of great benefit. This custom inaugurated by Dr. Carmalt and continued by Dr. Wordin has been of great good, especially to the smaller societies. It is to be hoped that the custom is now so fully established that it may be maintained by their successors in office.

Dr. Lowell Holbrook, of Thompson, the oldest member of the County Society, has died during the year. Even after age had rendered it difficult for him to leave his home, he came to the meetings of the Society and took part in its proceedings. He will always be remembered in the Society as a man who did his part well. Three new members have been added to the Society during the year.

The direct work of the Councilor in Windham County has been very limited. The Councilor was appointed chairman of the Committee on the Adoption of a Constitution to conform with the new Constitution of the State Society. The report of this committee was accepted, and the County Constitution was adopted at the April meeting. No matters of discipline have arisen during

the year. Some members are delinquent in the payment of their yearly dues. These, under the provisions of the new constitution, are debarred from membership without further action by the Society. This, no doubt, will become a constant matter for attention of future councilors.

The past year Windham County has simply demonstrated the fact that the Councilor is of some use in aiding the officers in carrying out the work of the year, and in keeping the County Society in more intimate contact with the work of the State Society.

S. B. OVERLOCK,

Councilor for Windham County.

(f) Litchfield County, by Dr. George H. Knight:

Mr. President and Gentlemen of the House of Delegates:

I want to apologize, in the first place, because I have no written report, although I was authorized to make one. When I sat down at my desk a few days ago prepared to do so, I didn't know what kind of a report to make out. Up in old Litchfield County we have no troubles, disappointments have been very few, and I certainly haven't been called upon to interfere, and we have had no occasion for discipline. I was prevented, by an attack of grip, from attending our last meeting. I simply want to say that up there in that County there seems to be an acceptance of the majority rule, and it has always been made unanimous. The only point that I would suggest is that perhaps we might have a little greater zeal among ourselves in attending our County meetings, and that applies to me as to anybody else. I know of no other report to make concerning our Society.

(g) Middlesex County, by Dr. Frank K. Hallock:

Mr. President and Gentlemen of the House of Delegates:

The harmonious and satisfactory conduct of medical affairs in Middlesex County has been marred by only two occurrences of a discordant nature.

The first of these relates to a strained relation existing between two physicians living in neighboring towns in the lower part of the

County. It is expected that the differences between these two men will be properly adjusted and the ill feeling subside.

The second item of interest is of far more importance, as it concerns a subject which is causing trouble in the profession in various parts of the State. I refer to the practice of contracting medical services to lodges, societies, corporations, etc. As far as I know there are only three of our physicians in the County who are guilty of this method of practice.

Several years ago our County Association took positive action and sent out a circular calling upon its members to refrain from contract alliances of any kind. It appears that little heed has been paid to this request, and last fall, at the semi-annual meeting, by unanimous vote, the censors were instructed to prepare a second circular notifying the members that the contract system must cease. Following this, I, as Councilor, had an interview with the offending brethren and it was decided that by mutual agreement they would abandon the practice. Unfortunately such an agreement has not yet been reached and the matter stands in statu quo.

These physicians are desirable men, and we are anxious to retain them in our Society; nevertheless, it would seem the duty of the Censors and Councilor, after proper notification, to ask the County Association at its next meeting to vote upon the question of their forfeiting their membership.

The two meetings of the County and the monthly meetings of the Central Medical Associations have been well attended, and a spirit of interest in progressive medicine has been earnestly manifested by the members.

Of the two hospitals in Middlesex County it is a pleasure to speak. The administration of affairs at the Connecticut Hospital for Insane has been most satisfactory, and its record is one of State pride.

The Middlesex Hospital, the general hospital of the County, has issued its first annual report, and shows that the institution is well established financially, and is making steady progress in the efficiency of its services to the community.

I am sure it will touch a responsive chord in all your hearts to know that generous subscriptions by the citizens of the County have resulted in the establishment of free beds in the hospital

named in honor and memory of two of the most worthy and capable physicians who have graced the annals of our State Society — Francis D. Edgerton, of Middletown, and John H. Grannis, of Saybrook. Both were zealous in the foundation of the Middlesex Hospital and both have been President of the Connecticut State Medical Society. Respectfully submitted,

FRANK K. HALLOCK, Councilor.

(h) Tolland County, by Dr. William L. Higgins:

Mr. President and Gentlemen of the House of Delegates:

The duties of Councilor for Tolland County have not been arduous for the past year. I have attended all the meetings which have been held by the board. And I have made a written report of my doings to our County Association. I succeeded in getting two new members of the Society, and brought about one re-instatement. I do not know of any physician in Tolland County who is eligible for membership who is not now a member, with the possible exception of one, who, I understand, has retired from practice on account of his age. Including him, there are twenty-eight physicians in the County, divided as follows: Twenty-two in our Society, two members of the Homeopathic Society, two members of the Eclectic Society, one who practices "all kinds," according to his own statement, and one who is retired.

We have one midwife who is located in Vernon.

The new Constitution and By-laws, while a little perplexing, in places, have been on the whole quite satisfactory, and if the larger Counties continue under it to show the same magnanimity to the small Counties that they did under the old order of things, I am sure that we shall dwell in peace together forever.

Respectfully submitted,

WILLIAM L. HIGGINS, Councilor.

(5) Report of Treasurer, Dr. Joseph H. Townsend (New Haven), to the Connecticut State Medical Society, for year ending May 23, 1906:

Report of the Treasurer.

Receipts.

| | |
|-----------------------------------|------------|
| Balance from old account, | \$885 48 |
| Dr. W. T. Bacon, Anniversary Chr. | 247 50 |
| Cash from County Clerks: | |
| Hartford County..... | \$504 68 |
| New Haven County..... | 427 95 |
| Fairfield County..... | 318 38 |
| New London County..... | 117 67 |
| Middlesex County..... | 108 00 |
| Windham County..... | 107 48 |
| Litchfield County..... | 96 88 |
| Tolland County..... | 37 80 |
| | <hr/> |
| Total receipts from taxes, | \$1,718 84 |
| | <hr/> |
| | \$2,851 82 |

Expenses.

| | |
|---------------------------------------------|------------|
| Expenses of annual meeting and banquet, | |
| 1905 | \$ 397 55 |
| Proceedings, printing and distributing..... | 1,188 88 |
| Stenographer | 56 00 |
| Printing and stationery..... | 54 10 |
| Postage | 24 00 |
| Telephone, cartage, etc..... | 6 03 |
| Salary of Secretary..... | 150 00 |
| Expenses of Secretary..... | 15 65 |
| Salary of Treasurer..... | 25 00 |
| Bond of Treasurer..... | 5 00 |
| | <hr/> |
| | \$1,922 21 |
| Balance cash on hand, | 929 61 |
| | <hr/> |
| | \$2,851 82 |

Arrears in Tax Laid May 24, 1905.

| | |
|-------------------------|----------|
| Hartford County..... | \$ 36 00 |
| New Haven County..... | 294 00 |
| Fairfield County..... | 108 00 |
| New London County..... | 33 00 |
| Middlesex County..... | none |
| Windham County..... | 9 00 |
| *Litchfield County..... | 85 00 |
| Tolland County..... | none |
| <hr/> | |
| Total, | \$565 00 |

Respectfully submitted,

JOSEPH H. TOWNSEND, Treasurer.

(6) Report of Committee on Public Policy and Legislation by Dr. E. J. McKnight (Hartford).

Report of Committee on Public Policy and Legislation.

Mr. President and Gentlemen of the House of Delegates:

As there has been no session of the Legislature since the last annual meeting of this Society, the report of your Committee must of necessity be one of recommendation only.

The session of 1903 passed the following amendment:

“Any one of the Examining Committees appointed under the provisions of Section 4716 may accept the license of any State Board of Medical Examiners of any State in the United States or in the District of Columbia, in lieu of said examination, provided the applicant shall present such license to the Examining Committee before whom he appears, together with satisfactory evidence that such license has been issued after a State examination of as high a grade and of the same kind as that required by said Examining

* Fifty-five dollars of this sum is due to the fact that the secretary of this county association was not correctly notified as to the amount laid as the annual tax.

Committee, that he is a resident of this State or that he intends in good faith to permanently reside herein, that he has been in actual practice for a period of at least six months in the year immediately preceding the date of his application, and that he is of good moral character and professional standing; and upon the payment to said Committee of the sum of fifteen dollars he may receive a certificate of the approval of such license by said Examining Committee."

This, so far, has been of little value to this Society, but has been very much misused by one of the examining boards. On account of this fact and the impossibility of securing reciprocal relations with other States while we have the three Examining Boards, as at present constituted, your Committee recommends that the act concerning the Practice of Medicine and Midwifery be so amended that there be but one Examining Board, composed of six members, three from the Connecticut State Medical Society, two from the Connecticut Homeopathic Medical Society, and one from the Connecticut Eclectic Medical Association.

It is also recommended that a bill be introduced in the next session of the General Assembly to regulate the sale of Proprietary Medicines and the Adulteration of Food.

It is believed that many are practicing medicine in this State at the present time illegally, and it is recommended that this Committee or a committee appointed for this especial purpose be instructed to secure the conviction of such as far as possible, and that a sufficient sum of money be placed at their disposal for the carrying out of this work.

The anti-vaccinationists, who were defeated in the last session of the General Assembly, will undoubtedly again attack our vaccination laws at the next session. While the document which the Special Committee will prepare upon this subject for general distribution will undoubtedly be of great value, it is necessary for some one to have charge of all matters of this kind which come before the Assembly. Our opponents have always been represented by able legal advisers, and your Committee feel that it should be given the authority to secure the services of a competent attorney to help it out in obtaining legislation which may be desired, and in preventing that which might be detrimental to the Public Health or the in-

terests of the Medical Profession. Your Committee feels that the time has come when this Society should adopt business methods in treating these matters, and that a sufficient amount of money should be placed at its disposal for the proper carrying out of this work:

Your attention is called to the fact that considerable expense will be incurred in printing the pamphlet upon vaccination, and that some more definite means for raising the necessary amount must be arranged for.

In endeavoring to secure convictions for violations of the Medical Practice Act the law, as it stands at present, has been found to be ambiguous and not sufficiently explicit, and your Committee would therefore recommend that Section 4714 of the General Statutes be amended in such a way that there can be no doubt as to its meaning. Respectfully submitted,

E. J. McKNIGHT,
C. S. RODMAN,
J. W. WRIGHT,
S. B. OVERLOCK,
ELIAS PRATT,
N. E. WORDIN,
WALTER R. STEINER,
FRANK K. HALLOCK,
WILLIAM L. HIGGINS.

Discussion.

Dr. W. L. Higgins (South Coventry): Mr. President, I would move that the chair appoint a committee of three to consider the recommendations of the Committee on Public Policy and Legislation and report tomorrow. Motion adopted.

The President: I will appoint as this committee Dr. W. L. Higgins (South Coventry), Dr. E. O. Winship (Rockville), and Dr. D. Chester Brown (Danbury).

Dr. W. L. Higgins: Mr. President, I would suggest that I feel a little delicate about serving on that committee, being one of the committee on vaccination. I suggest that you appoint some one else in my place.

The President: I will appoint in your place Dr. Norton R. Hotchkiss, of New Haven.

(7) Report of Committee on Medical Examinations, by Dr. C. A. Tuttle (New Haven).

Report of Committee on Medical Examinations.

Mr. President and Gentlemen of the House of Delegates:

The Committee on Medical Examinations submits herewith its thirteenth annual report. The Committee has held six regular meetings during the year, at all of which all members have been present. Three of these meetings have extended throughout two days. Matters pertaining to general and medical education have been thoroughly gone over and the ever-present subject of reciprocity and inter-state indorsement of licentiates, has had its due consideration. There have been examined 72 candidates for certificates of qualification in general practice. Of these 15, or 20.8%, have been found below requirements. There have also been examined 9 in midwifery alone, of whom 5 have passed. The number examined, viz., 72, is 22 less than last year, and six less than the average for the past five years. The percentage of rejections this year, viz., 20.8%, is 3.6% less than last year. This was due to the circumstance that in the July examinations, by pre-arrangement, the same questions were used by the four New England States holding examinations on the same days. These questions, prepared by a committee of the New England Confederation of Medical Examining Boards, were somewhat more easily answered than those we are accustomed to give. At this examination but 13.2% were rejected.

In many States the Examining Board is of semi-political appointment, and has little if any connection with the State Society. Hence, a special Committee on Medical Education has been established by the State Society, to represent it in and to co-operate with the Council of Medical Education of the American Medical Association. After much correspondence with our President and the Council of the American Medical Association, it has been decided that in this State our Committee shall assume the work and title of the Committee on Medical Education as well as the Committee on Medical Examinations, and amendments to the by-laws will be presented covering this decision.

During the year the Secretary has taken on some of the work relative to registration usually done by the late honored Secretary of the State Board of Health, his inability, from infirmity, to direct it, making this imperative. Acting unofficially in this capacity, caused some uneasiness in the mind of one of the Fairfield members of our Society, concerning an old registration. This was quieted, however, by due explanation. The incident brought out more clearly the hydraheadedness of our system, viz., examinations by three different bodies and a registration by a fourth. In nearly all States the examining and registering body is one and the same.

In the preparation and adoption of the new by-laws our Committee was entirely passed over, and at this moment we have only a phantom existence. As we did not exist, naturally we could hardly be expected to report, and this practically extemporaneous report is the result of a notice from the Secretary a few days ago, asking that at least a partial statement be made by the Committee. However, the President has decided we are worthy his protection and indorsement and has taken us into his fold and will present amendments to cover us. The Committee would suggest that in the future make-up of the Committee on Public Policy and Legislation that at least one member of the Examining Committee be appointed. There are many difficulties in the practical working out of the old Medical Practice Act, or changes in a proposed new one, which might possibly be overcome.

The Connecticut State Register and Manual, published each year by order of the Secretary of State, contains the only official list of physicians published in this State. In getting out a partial list of licentiates of this State your Committee has found this list woefully incomplete and inaccurate. We would suggest that all members of the Society look at this list and determine if he has any official existence, and, if not, to notify at once the Secretary of the State Board of Health, Dr. J. H. Townsend, Hartford, Conn.

With this year the term of Dr. Garlick as a member of this Committee expires. It would be impossible, and, indeed, an injustice, to try to measure the faithful work done in his departments. His devotion to the cause of higher education, general and medical, and his accurately weighed and carefully digested counsel upon all matters pertaining to the Committee and the welfare of the pro-

profession in the State has won for him the profoundest respect of all.

Appended is a list of the successful candidates of the year and a set of questions used at the examinations.

Respectfully submitted,

CHARLES A. TUTTLE, Secretary.

Candidates Qualified July 11th and 12th, 1905.

Edwards, G. H., Yale, 1902.
 Pursel, W. D., Univ. of Pa., 1901.
 Taylor, M. W., Tufts, 1905.
 Gregory, W. S., P. & S. (N. Y.), 1903.
 Hanchett, H. B., Jeff., 1905.
 Flynn, D. A., Yale, 1905.
 Snow, W. H., Univ. of N. Y., 1880; P. & S. (Ontario), 1881.
 Beers, H. H., Univ. of Vt., 1901.
 Beach, C. T., Yale, 1905.
 McPartland, P. F., Balt. Med., 1905.
 Gardner, C. W., Univ. Md., 1901.
 Rindge, M. P., P. & S. (Cleveland), 1905.
 Levin, J., Univ. Md., 1905.
 Pendleton, E. R., P. & S. (Boston), 1904.
 O'Connell, D. W., P. & S. (Balt.), 1905.
 Pratt, Charles R., Yale, 1905.
 Sullivan, T. D., Jeff., 1905.
 Townshend, R., P. & S. (N. Y.), 1905.
 Hanrahan, W. R., P. & S. (Balt.), 1905.
 Davis, F. W., P. & S. (Balt.), 1905.
 Herrick, W. W., Yale, 1905.
 Crane, R. W., Yale, 1905.
 Lane, F. P., Yale, 1904.

Candidates Qualified November 14th and 15th, 1905.

Buffum, M. P., Univ. Vt., 1898.
 Dole, M. P., Women's Med., Balt., 1904.
 Herbert, A. C., Med. Va., 1903.
 Saunders, U. B., P. & S. (N. Y.), 1900.
 Wiedman, O. G., Univ. Pa., 1905.

Short, W. H., Georgetown, 1904.
Welsh, T. F., Georgetown, 1904.
Thompson, W. U., Jeff, 1889.
Stone, H. R., Johns Hopkins, 1904.
Thomas, S. B., McGill, 1903.
Hartung, F. A., Univ. Pa., 1903.
Bouoff, Z. A., Yale, 1904.
Strang, R. H., Univ. Pa., 1904.
Martin, J. S., Yale, 1905.
Smallman, T. F., Yale, 1905.
McHugh, J. F., Harvard, 1901.
Brophy, E. J., Yale, 1904.
Ford, A. P., Women's Med., Pa., 1904.
Fasser, A. O., Yale, 1905.
Leahy, S., Yale, 1905.
Donahue, B. F., Yale, 1905.
Curran, P. J., P. & S. (N. Y.), 1901.
Turbert, E. J., Balt. Med., 1904.

Candidates Qualified March 13th and 14th, 1906.

Derrick, G. W., Tufts, 1903.
Keith, A. R., Harvard, 1903.
Wilgus, S. D., Univ. of Buffalo, 1895.
Ranche, H. M., P. & S. (Balt.), 1904.
Johnson, H. O., Univ. Md., 1903.
O'Connell, J. E., Yale, 1905.
Leonard, G. A., Md. Med., 4th year.
Smith, U., Queen's Univ., 1904.
Kingsbury, I. W., P. & S. (N. Y.), 1903.
Ingham, O. G., P. & S. (Boston), 1903.
Clarke, H., Tulane, 1905.

Physiology.

(One and one-half hours.)

1. What is accomplished physiologically by the "portal circulation"?

4. Symptoms and pathology of senile hypertrophy of the prostate?
5. Pathology of ascites due to cirrhosis of the liver?
6. Diagnosis and treatment of fractured patilla?
7. Describe an ulcerating epithelioma of tongue and differentiate it from an ulcerating syphilitic gumma of that organ.
8. Describe repair in fracture of a long bone.
9. Describe the contraindications to the use of chloroform as an anæsthetic; (b) in what conditions should we prefer it to ether?
10. Give details of an operation for cancer of breast involving complete enucleation of the glands.

Obstetrics and Gynæcology.

(Two hours.)

1. Give differential diagnosis between ovaritis of right side, appendicitis and salpingitis.
2. Give the differential diagnosis between gonorrheal vulvitis and acute simple vulvitis. Detail the treatment of each.
3. Describe the superior and inferior straits.
4. Describe the technique of delivery when the hand prolapses by side of the head.
5. Discuss Hegar's sign of pregnancy.
6. Name conditions which justify the premature termination of pregnancy. How would you terminate it at (a) three months? (b) six months? (c) eight months?
7. Give symptoms indicating death of fetus in utero.
8. What are the advantages of axis-traction forceps?
9. What is the etiology of ante partum hemorrhage at nearly full term, the placenta being normal in its attachment?
10. How would you determine the relaxation of the vaginal outlet? What are the principal operative procedures in treating it?

Chemistry and Hygiene.

(One and one-half hours.)

1. Give the definition of (a) an acid, (b) a salt, (c) a fat, (d) a base.

5. State, briefly, the function or functions of (a) bilirubin, (b) hemoglobin, (c) myosinogen, (d) fibrinogen, (e) caseinogen.
6. Describe the different kinds of muscular tissue and the mode of action of each.
7. What are the functions of the skin and the appendages?
8. Give the physiology of vision.
9. Give the physical properties and chemical composition of normal urine, and name the more important excrementitious products found therein.
10. What is meant by the tidal, complementary, reserve and residual volumes of air?

Anatomy.

(Two hours.)

1. Describe the frontal bone, (a) surface, (b) articulations, (c) sinuses.
2. Name three general classes of joints and give examples of each.
3. Describe the abdominal aorta and name, in order, the branches of the same.
4. Describe (a) Poupart's ligament; (b) Gimbernat's ligament; (c) give surgical importance of each.
5. Give the origin, cause and topography of the ureters.
6. Name, locate and describe the ductless glands of the body.
7. What is the pons Varolii and where situated?
8. Describe the uterus, its topography, structure, blood and nerve supply.
9. Give the microscopic anatomy of compact bone tissue.
10. Describe the hip joint.

Surgery.

(Two hours.)

1. Give symptoms and pathology of septicemia.
2. Cerebral abscess from middle ear disease, (a) where located, (b) diagnosis, (c) treatment.
3. Diagnosis of cancer at the pylorus.

2. How can perishable foods be best preserved in long distance transportation?

3. What are some of the abnormal constituents of urine? How would you test urine for blood and pus?

4. What is sodium bicarbonate? Give formula. In what official preparations is it found? What is its action in bread-making?

5. Compare the constituents of human milk with cow's milk.

6. Give the chemical name and formula for Rochelle Salts. How is it prepared?

7. Define ptomaines — leucomaines — typhotoxine — tyrotoxin, and pyroxilin.

8. What are alkaloids? What is the difference between a liquid and a solid alkaloid? Name three of the liquid alkaloids.

9. From what sources may chronic plumbism arise? What are the symptoms and treatment?

10. What is cane sugar? What is glucose? what is the distinction between the two?

Materia Medica and Therapeutics.

(Two hours.)

1. Give the physiological action and therapeutics of sodium salicylate.

2. Give the official name and therapeutics of Fowler's solution.

3. Treatment of insomnia?

4. Name three stimulating expectorants and their doses.

5. What measures would you use in cases of poisoning by the following substances: Paris green, carbolic acid and tincture of opium?

6. How do the following drugs act upon the circulatory system: Nitroglycerine, strychnine, digitalis and alcohol?

7. In what manner do the following drugs stimulate diuresis: Potassium acetate, digitalis and the nitrates?

8. How would you treat a case of acute gastritis?

9. Write a prescription for constipation containing three drugs, acting upon different parts of the alimentary tract, and state how they produce their effects.

10. Contrast the action of strychnine and belladonna upon the circulatory and nervous systems and upon the intestinal tract.

Practice, Pathology, and Diagnosis.

(Two and one-half hours.)

1. Describe a case of emphysema.
2. Differentiate pericarditis from endocarditis.
3. Discuss dyspnoea.
4. Describe a case of chronic interstitial nephritis.
5. Give the symptoms and treatment of ring worm.
6. Pathology and diagnosis of gastric ulcer.
7. Describe a case of mumps.
8. What changes take place in the blood in leukaemia?
9. What are the symptoms and sequelæ of a non-compensating heart?
10. Pathology of arterio-sclerosis?

(8) Report of Committee on Scientific Work, by Dr. Gustavus Eliot (New Haven).

Report of Committee on Scientific Work.

Dr. Eliot: This report is the report of the chairman of the Committee on Scientific Work, and I assume all responsibility for it, and relieve my colleagues, Dr. McKnight and Dr. Steiner, from any responsibility for what I say here.

Mr. President and Gentlemen of the House of Delegates:

The election, for the first time, of a Committee on Scientific Work by the Connecticut State Medical Society inaugurates a new departure in the work of arranging for the scientific sessions of the organization.

For years there has been general complaint that the meetings of the State Medical Society were not what they should be.

An examination of the existing conditions revealed several apparent causes for this state of affairs.

First. The programme usually contained the titles of more papers than could possibly be read in the time allotted for the meetings.

Second. The programme was usually made up chiefly of papers which had been read before the various County Associations. These second-hand or warmed over papers could scarcely be expected to excite the same interest on their second presentation as attended their first reading. For years the smaller part of the programme was made up of papers which had been voluntarily offered by their authors. It has only been within comparatively recent years that a few of the presidents have ventured to invite individuals to read papers especially prepared for the meetings of the State Society.

Third. In consequence of the excessive number of papers on the programme it was impossible to tell beforehand when any particular paper would be reached, and, as a result of this uncertainty, it not infrequently happened that the author was not present when his paper was called.

Fourth. Members who might wish to hear or to discuss particular papers were equally unable to tell when those papers would be read, and, consequently, they too were likely to be absent, and to miss the very papers they wished to hear.

Fifth. Even when the authors of the papers and those who wished to participate in the discussions were on hand to seize their opportunity there was usually such a general feeling of hurry to finish one subject, in order to make way for someone else, that papers were rarely discussed as fully as they deserved.

Sixth. Sometimes, unfortunately, the presiding officer neglected to call for discussion, or, when he did so, indicated by his tone and manner that discussion would delay the proceedings.

Seventh. Occasionally, when discussion was courteously invited, it happened that some member would jump up and introduce some entirely irrelevant subject, and in this way entirely side-track any intelligent discussion of the subject under consideration.

Probably most of you will agree that the most important object of a medical society is to promote the interchange of views on medical subjects by the members.

To do this is of greater utility than to attempt to transform the meeting of the Society into a session of a post-graduate school by inviting men from outside of the State to come and give lectures, however interesting and valuable they may be.

Less useful, also, are papers by specialists of our own Society on rare diseases and new methods of treatment. These can be read about, by the men who are interested in them, in their own offices, in books and journals, more comfortably than in a public hall.

Papers on subjects of general interest, discussed freely by members of our own Society, are most likely to make our meetings of interest and value to the majority of those present.

It was the unanimous sentiment of the members of the Committee that they would not knowingly place upon the programme any paper which had previously been presented in public.

They further decided that, for the present meeting, at least, it would be more satisfactory if the Committee invited no one except members of the Society to participate in the meetings.

Three half-day sessions have been assigned for scientific work.

The first, on Wednesday afternoon, will be given up, as is indicated on the programme, to the more specialized subjects, Psychiatry, Pathology, Laryngology, Genito-Urinary Surgery, and Dermatology.

The second, on Thursday morning, to Surgery and Gynæcology, with the President's address at noon, according to custom.

The third, on Thursday afternoon, to General Medicine and Obstetrics.

The Committee has endeavored to make the programme fairly representative, both of the various departments of medicine and of the membership of the Society.

But two members in the whole State have presented voluntary papers.

Some who have been invited to write papers, or to participate in discussions, have neglected to reply to the chairman's letter. Others have declined to take part in the meetings. This explains, to some extent, at least, why some parts of the State have such a small numerical representation upon the programme.

The following conclusion may be fairly formulated:

First. The Committee should arrange for each session a programme containing no more papers than can be read and properly discussed during the hours allotted to the session.

Second. The author of a paper should make it of such a length

that not more than fifteen or twenty minutes will be occupied in reading it.

Third. The paper itself should be based upon the personal experience of the writer. It should treat of some subject of interest to the profession at large. No attempt should be made to incorporate in it a detailed account of original investigations or minute histories of a large series of cases. It should rather contain an exposition of general principles and conclusions, illustrated, perhaps, by the salient features of the history of one or a few cases.

Fourth. The discussion should be strictly limited to the topics brought forward in the papers.

Fifth. The presiding officer should encourage intelligent discussion, but should discourage irrelevant remarks, and should allow no one to exceed the time limit placed upon papers and discussions.

Sixth. If these suggestions are followed, the sessions will not be unduly prolonged, the meetings will prove of interest and value to the members who are present, and the attendance at the meetings will undoubtedly be considerably increased.

(9) Report of Committee on Honorary Members and Degrees, by Dr. O. T. Osborne (New Haven).

(Read by the Secretary, in the absence of Dr. Osborne.)

Report of Committee on Honorary Members and Degrees.

Mr. President and Gentlemen of the House of Delegates:

Your Committee on Honorary Membership and Degrees has no recommendations to make. Our honorary membership is already quite large, and we do not believe that we have failed in our duty in making no nominations this year.

For the sake of a suggestion to future committees, we would like to state that it is our unanimous opinion that in recommendations for honorary membership such men should be selected as are widely known for their scientific acquirements and who also have shown special and specific interest in the Connecticut Medical Society or some component part of it. We think that it is of no value to us or to the men so honored to elect as honorary members men of world-

wide reputation, but who can never personally be present at our meetings. Respectfully submitted,

OLIVER T. OSBORNE, Chairman,
CHARLES E. STANLEY,
CHARLES C. GILDERSLEEVE.

(10) Report of Committee on Arrangements, by Dr. B. Austin Cheney (New Haven).

Dr. Cheney, as chairman of this committee, outlined the plans that had been arranged for the entertainment of the members during this session of the Society. On Wednesday evening, May 23d, an informal dinner was to be held at the Graduates' Club, for which a dollar would be charged. Later, at 8 P. M., the New Haven members of the Connecticut State Medical Society would give a smoker to the out-of-town members, at Harmonie Hall. At the conclusion of the exercises, on the following day, Dr. Cheney invited the members of the Society to a punch at the Country Club. The annual dinner was planned for Thursday evening, at 8 o'clock, at the New Haven House. The price of the dinner was \$2.00 a person.

Dr. Cheney moved that the Society pass a vote of thanks to the Governing Board of the Harmonie Club for the use of their entire club house, in addition to the two rooms that had been hired of them for the Society to meet in. Carried.

The question of exhibits in connection with the Annual Meetings of the Society was then brought up. It was discussed by Dr. W. H. Donaldson (Fairfield), Dr. G. Eliot (New Haven), Dr. Carmalt (New Haven), and Dr. A. G. Cook (Hartford). A motion was made by Dr. W. H. Donaldson (Fairfield), that such exhibits be held, but the motion was lost by a large majority.

Adjourned to meet again at 5 P.M.

AFTERNOON SESSION, WEDNESDAY, MAY 23, 1906.

Reports of Committees.

The meeting was called to order at 5 P. M. by the President, Dr. Wordin.

The following reports were then read and accepted.

(11) Report of the Committee on Venereal Disease, Dr. R. A. McDonnell, (New Haven).

(Read by Dr. W. H. Donaldson (Fairfield), in the absence of Dr. McDonnell.)

Report of Committee on Prevention of Venereal Diseases

Mr. President and Gentlemen of the House of Delegates:

During the past year the movement of education in the matter of venereal diseases has gained considerable headway.

February 12, 1905, was formed the American Society of Sanitary and Moral Prophylaxis, the object of which is to limit the spread of diseases, which have their origin in the social evil. It proposes to study every means, sanitary, moral, and administrative, which promises to be most effective for this purpose. It is composed of the medical profession and of the laity, including women. It numbers among its members some of the leading lights in our profession. Its President is Dr. Prince A. Morrow, and its Secretary is Dr. Edward L. Keyes, Jr.

This society desires that the following communication be acted upon at this meeting.

Dear Doctor:

I send herewith a pamphlet which explains itself.

The efforts of the Society of Sanitary and Moral Prophylaxis have been greatly impeded by the fact that the profession has made no authoritative statement on the possibility and healthfulness of continence in man.

According to Dr. Osler's dictum, "Physicians should be the apostles of continence." And I commend to your attention the first resolution passed by our Society:

Resolved, That this society asserts that continence is compatible with health and reprobates the contrary doctrine as a menace to the physical and moral welfare of the individual and of society.

If such a resolution could be introduced before your State Society and your delegates to the American Medical Association could be instructed to vote in favor of some such resolution, it would be of immense assistance in neutralizing the pernicious influence of those physicians who preach the opposite doctrine and in helping along our cause, with which I am sure you are in sympathy.

Yours truly,

EDWARD L. KEYES, JR.,

Secretary Society Sanitary and Moral Prophylaxis.

Your committee has not compiled any pamphlets on the subject for which it was appointed, having been forestalled by the State Board of Health. Furthermore it desires to avail itself of the results of the Symposium on Venereal Diseases at the Boston meeting of the American Medical Association.

R. A. McDonnell,

W. H. Donaldson,

Committee.

The committee was continued for another year.

DISCUSSION.

Dr. W. H. Donaldson (Fairfield): Dr. McDonnell believes, as I do, that he could do much better work if there was another one or two members added to this committee. I would like another New Haven man on it or some one convenient to Dr. McDonnell. I think some one could confer with him more readily here in New Haven, in my place, or by adding another member to the committee.

Dr. Gustavus Eliot (New Haven): I believe none of us will be inclined to underestimate the work of the committee on the prophylaxis of venereal diseases, and as the committee suggests its number should be increased, I move that the president be authorized to increase the committee on venereal disease by the appointment of either one or three additional members, as may be deemed best. Carried, after the House of Delegates decided that the increase of this committee should be by three members.

The three additional members appointed by the President are: Dr. Jay W. Seaver (New Haven), Dr. Frank H. Wheeler (New Haven), and Dr. Charles S. Stern (Hartford).

(12) Report of Committee on a Colony for Epileptics, Dr. Max Mailhouse (New Haven).

Read by Dr. Frank K. Hallock (Cromwell), in the absence of Dr. Mailhouse.

Report of Committee on a Colony for Epileptics in Connecticut.

To the President and Members of the Connecticut Medical Society:

At our last annual meeting and following the report of the committee on "Matters pertaining to the establishment of a Colony for Epileptics," an enlarged committee was appointed to continue the work on the same lines. At that time the matter had passed before the committee on Humane Institutions of the General Assembly, but nothing had as yet been accomplished. With the assistance of the committee on legislation and also of those members of our society who were members of the house and senate, more particularly Dr. Wm. L. Higgins, of South Coventry, the matter came before the Committee on Appropriations in the shape of a substitute bill, favorably reported by the Committee on Humane Institutions and referred to the former, for the appointment of a commission by the state. This committee gave a hearing on June 20th, 1905, to all those interested, at which your committee as well as the committee on legislation were represented. A number of other physicians were also present and expressed views in favor of the movement. There was no opposition at this hearing. The matter was gone into extensively, there were shown views of colonies already in existence from books in the hands of the committee, together with reports therefrom, and the hearing proved very satisfactory to us. The Appropriations Committee evinced a great interest in the facts presented. Following this there was favorably reported and passed by the general assembly the following:

GENERAL ASSEMBLY,

JANUARY SESSION, A.D. 1905.

Resolved by this Assembly:

SECTION I. That there shall be appointed by the governor in July, 1905, a committee of three persons, who shall investigate

methods for the care and treatment of persons resident in this state who are affected with epilepsy in any of its forms and conditions and report to the general assembly, at its January session, 1907, the result of such investigation, together with what is deemed by said committee to be the most practical plan to be adopted for such care and treatment by the state as shall secure the most humane and curative results.

SEC. 2. The members of such committee shall serve without compensation, but the necessary expenses of said members shall be paid by the state, and the comptroller shall draw his order on the treasurer for such expenses upon the presentation of vouchers therefor duly approved by the governor.

SEC. 3. The sum of three hundred dollars is hereby appropriated to be paid out of any money in the treasury not otherwise appropriated, in full compensation for all the purposes of this resolution.

In accordance therewith on July 31st, 1905, Governor Henry Roberts appointed Drs. Max Mailhouse of New Haven, Edwin A. Down of Hartford, and Frank K. Hallock of Cromwell, a committee to investigate plans for the care and treatment of epileptics in this state and report their conclusions and recommendations to the next general assembly. This committee is now at work and will be prepared with its report when the legislature again meets.

Now for the success of this movement it is incumbent upon the members of this society to interest citizens who have the public welfare at heart, in that they spread the gospel of a colony for epileptics throughout the state so that when the legislators meet again in Hartford the movement will have numbers from all counties back of it. To this end we bespeak the assistance of every member of this society.

MAX MAILHOUSE,
For the Committee.

(13) Report of Committee on Vaccination, by Dr. E. J. McKnight (Hartford).

Report of Committee to Prepare a Pamphlet on Vaccination.

Mr. President and Gentlemen of the House of Delegates:

Your committee regrets exceedingly that the ill health of the chairman, Dr. C. A. Lindsley, made it impossible for them to carry

out in the early part of the year the work for which they were appointed. After his death and the appointment in his place of Dr. W. E. Ray of Hartford, it was considered advisable to postpone action until the documents in the office of the secretary of the State Board of Health were arranged and classified in the new office in the State Capitol in Hartford.

Your committee therefore respectfully reports that they have been unable to complete their work and ask that they be continued with the understanding that a suitable pamphlet be printed before the opening of the next session of the General Assembly.

E. J. McKNIGHT, *Chairman*,

WYETH E. RAY, *Clerk*.

WILLIAM L. HIGGINS.

The committee was continued for another year.

(14) Report of Committee on National Legislation, Dr. Elias Pratt (Torrington).

Read by the Secretary in the absence of Dr. Pratt.

Report of the Member of the National Legislative Council.

Mr. President and Gentlemen of the House of Delegates:

The National Legislative Council of the American Medical Association met in the New Willard Hotel, Washington, D. C., Jan. 9th, 1906, at 1 P. M.

Sixteen states were represented by delegates. In addition to these delegates there were present Surgeon-General Walter Weyman, Surgeon-General R. M. O'Reilly; William H. Welch and William L. Rodman of the National Legislative Committee; George H. Simmons, Editor of the Journal of the A. M. A.; and H. W. Wiley, chief of the bureau of chemistry, Agricultural Department.

At this session the chairman, Dr. Charles A. L. Reed, made an address on National Medical Legislation and also laid out the plans for the work of the council.

On Jan. 10th, at 9.30 A. M., the members of the council met at the War Department, where they were received by the Secretary of War, William H. Taft. In the course of the interview that fol-

lowed, Secretary Taft asked the aid of the council and of the medical profession in maintaining the present scale of compensation paid to the sanitary department of the Isthmus of Panama and also spoke of the importance of the Army Reorganization Bill.

A visit was then made to Mr. Hepburn, chairman of the House Committee having in charge the Pure Food and Drug Bill known as the Hepburn Bill.

Following the call on Mr. Hepburn, the council went to the White House, where they were introduced to the President by Secretary Taft.

The President spoke of the work of the medical men in Panama and in the Army and Navy. He urged upon the members of the council the importance of the medical department of the Army and Navy in time of war and that it was during times of peace that the efficiency of that department should be developed. Provision should be made for an ample corps of doctors who should be trained to meet those conditions which arise during war.

At 2 P.M., the council met to act upon the various measures brought before it by the chairman.

After due consideration they voted to support the bill "To increase the efficiency of the Medical Department of the United States Army," and expressed their belief in the importance of this bill for the welfare of the Army of the United States. They also adopted an address to be presented to the Committee on Military Affairs of the House of Representatives.

After discussing the provisions of the Pure Food and Drug Bill and listening to remarks by Dr. H. W. Wiley, chief of the bureau of chemistry, they voted to give the influence of the council to the passage of this bill. This same measure has been introduced into several sessions of Congress. Two years ago and one year ago it passed the House but failed to pass the Senate. At the present writing the bill has passed the Senate and is now in the House. Mr. Hepburn has worked hard for its passage. It has now reached the stage where it may be called up for action at any time.

Your delegate has personally interviewed Messrs. Hill, Lilley, and Higgins in regard to the bill and they have promised to support the measure.

The council then voted to support a measure creating a Department of Public Health with representation in the cabinet of the President. They also voted to support the Anti-nostrum crusade and to urge upon Congress the need of legislation regulating the sale of such preparations.

The council then voted to advise the Legislative Committee to refer the matter of the National Incorporation of the American Medical Association back to the House of Delegates with a statement which shall make clear the impracticability of obtaining a charter of a truly national character or any charter which would be more advantageous to the association than the present one.

They voted to indorse the bill for the relief of Mrs. William A. Hammond, widow of the late Surgeon-General of the Army. After listening to reports of the workings of the Anti-canteen Law they voted to urge the repeal of said law.

The council then resolved to commend to the government of the United States the recognition of the services of Doctor James Carroll, the only surviving member in the Army of the United States of the Yellow Fever commission and who was one of those who subjected himself to the bite of a mosquito infected with yellow fever, being the first person to contract the disease experimentally.

At 10 A. M., Jan. 11th, the council waited in a body upon Senator W. B. Hepburn, to whom they expressed their appreciation of his services in obtaining pure food and drug legislation.

At 10:30 A. M., the council appeared before the House Committee on Military Affairs urging the passage of the Army Medical Reorganization Bill and presented the address adopted the preceding day.

Visits of courtesy to the Secretary of Agriculture, Mr. Wilson, and to the Secretary of the Interior, Mr. Hitchcock, closed the session.

ELIAS PRATT.

(15) Report of Delegates to the American Medical Association. Dr. W. H. Carmalt (New Haven) spoke briefly on the enjoyable meeting held at Portland in the summer of 1905.

Dr. W. L. Hammond (Killingly) was unable to attend this meeting as a delegate.

(16) The next order of business was the election of Dr. Maurice H. Richardson, of Boston, and Dr. William T. Bull, of New York (both having been nominated the year previous) as honorary members of this Society.

On motion of Dr. E. J. McKnight (Hartford), the Secretary was instructed to cast a ballot for their election into the society. Carried. Their election was then announced by the President.

(17) Miscellaneous Business.

The Secretary here read the letters of acceptance received from Dr. George M. Sternberg, of Washington, and Dr. Francis Delafield, of New York, in response to letters from the Secretary, informing them of their election as honorary members of the Connecticut State Medical Society.

Dr. Gustavus Eliot (New Haven): Mr. President, I was requested to suggest or propose two or three amendments to the constitution in regard to matters which were explicitly stated in the old constitution but which were not stated in the new constitution. The first is in regard to the remuneration of the county clerk's or secretaries for the collection of the annual tax. It was customary, under the old constitution, to allow the clerk of each county society five per cent. of the tax collected, for his trouble in collecting it. I would therefore move an amendment to the present constitution to the effect that the clerk of each county society be allowed five per cent. from the taxes collected annually, for his remuneration. Also, it was customary to give the county five per cent. of the taxes collected, to pay the county expenses. I would move, therefore, a further amendment to the constitution that each county be allowed to retain five per cent. from each annual tax collected, to pay the expenses of the county society.

Under the old constitution, furthermore, the treasurer was allowed a salary of \$25.00 per annum for his services, and I would move an amendment to the constitution that the treasurer be paid \$25.00 per annum for his services. The Secretary, also, by the old constitution was allowed \$150 a year, and I move that the constitution be amended so that the secretary shall receive \$150 per annum for his services. I believe the proper way is to refer them to a committee, and I would suggest that they be referred to the com-

mittee which the President appointed to consider several amendments to the constitution that were suggested this morning.

The President: The two amendments regarding the salaries of the secretary and treasurer belong strictly for action to the Council. They have already voted a salary to the secretary. The matter will lie over until tomorrow morning.

Dr. Arthur B. Coleburn (Middletown): Mr. President and Members of the House of Delegates: There is one matter that I have been not exactly requested to bring up but which I want to bring up at this time. You probably all knew it before, but it has again been brought to your attention today that there is quite an alarming increase in insanity not only in Connecticut but throughout the United States and Europe. There is a movement on foot in Europe to investigate the causes of the increase in insanity and to take what steps are possible to stop it.

In New York City the New York Psychiatric Society have appointed a committee to look into the matter, and I think that Connecticut ought to be in the forefront in this matter. I am at liberty to say that our President will call attention to this matter in his annual address. I would therefore offer this resolution:

Resolved, That the Connecticut Medical Society take favorable action upon the recommendation of the President of this Society, to be presented in his annual address, on the subject of the increase of insanity in this State; and that the President of this Society be requested to appoint a committee of five, whose duties shall be to investigate the causes of the increase of insanity in this State and to consider the desirability of establishing psychopathic wards in general hospitals, giving power to this committee to act as an advisory board to the trustees of such hospitals as request their aid in carrying out the recommendation of this Society.

Resolution adopted unanimously.

The President subsequently appointed as this committee: Dr. Allen R. Diefendorf (Middletown), Dr. Frederick T. Simpson (Hartford), Dr. Max Mailhouse (New Haven), Dr. D. Chester Brown (Danbury), and Dr. J. Reed Topping (Bridgeport).

Dr. W. H. Donaldson (Fairfield): Mr. President, I should like to propose an amendment to Sec. 2, Chap. VII of the By-Laws, relating to the council. This section says: "The Council

shall meet daily," etc. Further on it says: "It shall elect a chairman and a clerk, who, in the absence of the Secretary of the Society, shall keep a record of the proceedings." My amendment would thus alter the reading: "It shall, also, elect a chairman and a clerk, who, in the absence of the President or Secretary, shall perform the duties of these offices."

As it reads at present we have really a double-headed Society. The chairman of the council, at times, really supersedes the President of the Society, and when the council meets the President is simply a member of this body. He is overshadowed by the chairman of the council. The duties of the President are that he shall be the real head of the profession of the state during his term of office. But when he comes into the council he is merely a secondary consideration, and it does not seem to me to be in keeping with the dignity of the office of President that he shall be secondary in the office of the Society. I think that when he is in the council he should be the ranking officer. I consequently offer this amendment to Sec. 2, Chap. VII of the By-Laws.

The President: It will lie over until tomorrow and be acted on then.

The report of the special committee to consider the recommendations in the reports of the President, Secretary, and Chairman of the Council, was then read by Dr. Frank K. Hallock (Cromwell), as clerk of this committee.

Report of Special Committee.

Mr. President and Gentlemen of the House of Delegates:

The committee to whom was referred the recommendation contained in the report of the President, Secretary, and Board of Councilors respectfully report that they have had the same under consideration and recommend the adoption of the following motions:

I. Moved, That Chap. VIII of the By-Laws be amended by inserting in Sec. 1, after the words "A Committee on Public Policy and Legislation," the words "A Committee on Medical Examination and Medical Education," "A Committee on Honorary Members." That Sec. 4 be changed to Sec. 6; that there be inserted as Sec. 4 the following: Sec. 4. The Committee on

Medical Examination and Medical Education shall consist of five members who shall be appointed in accordance with section 4717 of the general statutes of the State of Connecticut. The committee shall conduct the medical examinations of candidates for certificates of qualification for license to practice medicine in the state in accord with the requirements of the medical practice act.

It shall annually present a written report to the House of Delegates.

The committee shall also be a committee on medical education and shall co-operate with the council of education of the American Medical Association in the effort to elaborate the standard of medical education in the United States.

Section 5. The committee on Honorary Members shall present annually to the House of Delegates the names of not more than three eminent physicians, not residents of this state, as candidates for honorary membership in this society. Such candidates may be elected honorary members in accordance with the provisions of Chap. I, Sec. 8, of the By-Laws.

Your committee report back to the House of Delegates the matter of an appropriation of \$250 in furtherance of the erection of a memorial to Dr. N. S. Davis, the founder of the A. M. A., and recommend that it be taken up by the House of Delegates as a committee of the whole.

II. Moved, That the early volumes of our minutes be deposited in the vaults of the State Library, under the custody of the State Librarian, Mr. George S. Godard, in the Capitol at Hartford, and that the secretary be instructed to extend to Mr. Godard the thanks of the society.

III. Moved, That the Board of Councilors be constituted the nominating committee of the Society, and that they make a report as such to the House of Delegates on the first day of the general session. After this report has been submitted an opportunity shall be given for other nominations to be made.

IV. Moved, That the secretaries of the county associations be instructed to make semi-annual reports after the spring and fall meetings, instead of annually after the spring meeting.

V. Moved, That the secretary be instructed to secure an alter-

ation of our seal so that it shall read: *Sigillum Societatis Medicalis Civitatis Connecticutensis*.

VI. Moved, That the secretaries of the county associations be instructed to prepare card indexes of the members and non-affiliated physicians in their respective counties as required by the By-Laws,

VII. Moved, That Chap. II, Sec. 1, be amended by adding the words: "The annual tax shall be collected from all such members except the secretaries of County Medical Associations, but the taxes of any member may be remitted by vote of the House of Delegates upon recommendation of any County Medical Association."

VIII. Moved, That Chap. XII, Sec. 3, be amended by inserting the following:

"Any County Medical Association may suspend or expel any member who is guilty of improper or unprofessional conduct, by a two-thirds vote of the members present and voting at any regular meeting, provided due notice has been given on the programme of said meeting at least ten days before its session. When from any cause a member of the Connecticut State Medical Society ceases to be a member of one of the component County Medical Associations, his membership in the Connecticut State Medical Society shall terminate, but,"

IX. Moved, That there be added as Sec. 11, of Chap. XII, the following:

"The several County Medical Associations shall have power to adjourn; to call special meetings, as they shall deem expedient; and to adopt such by-laws as they find desirable not contrary to the laws of this state or the charter and by-laws of the Connecticut State Medical Society."

Respectfully submitted,

E. J. McKNIGHT,
FRANK K. HALLOCK,
WILLIAM S. RANDALL.

It was moved and adopted that the report be received, and then that the consideration of the adoption of the proposed amendments to the By-Laws, mentioned in the report, be postponed until the next session of the House of Delegates.

Dr. E. J. McKnight (Hartford): Mr. President, I move that the Board of Councilors be hereby appointed a nominating committee to report immediately preceding the election of officers after the reading of the minutes, tomorrow morning. This seems necessary in view of the by-laws, which say the election of officers shall be the first business after the reading of the minutes, but nominations being necessary for such action, I don't think it conflicts with the By-Laws.

Motion adopted unanimously.

The Secretary then read the following communication which he had received from Dr. W. S. Barnes, the Secretary of the New Haven County Medical Association, with the request that he present it before the Society.

To the New Haven Medical Association:

Your committee, appointed at the meeting held September 6th, 1905, to report upon a resolution submitted at that meeting, said resolution having reference to the prevention of typhoid fever, begs leave to report as follows:

We recommend the adoption of the following resolution as expressing the sense of this Association; and we further recommend that it be transmitted to the several County Medical Societies of the State, and be brought before the Connecticut Medical Society at its next meeting.

The New Haven Medical Association, mindful of the occurrence in our State of typhoid fever, a preventable disease; and of the urgency of the problem of the disposal of sewage so as to avoid the pollution of the water supplies; and of the vital importance of the immediate attention to these hitherto too much neglected problems; makes the following recommendation:

That under the direction of the State Board of Health, a *Sanitary Survey* of the state be undertaken, said survey to take special cognizance of:

1. The several drainage areas of the State with reference to the public water supplies needed at the present time and for fifty years in the future.
2. The most practicable methods for the disposal of sewage in cities, towns and shore resorts.

3. The construction, location with reference to wells and water courses, and the best methods for the care of privy vaults and cesspools.

Signed,
C. A. LINDSLEY,
H. E. SMITH,
M. MAILHOUSE,
O. T. OSBORNE,
W. G. DAGGETT,

Committee.

By WM. G. DAGGETT, *Chairman.*

New Haven, Conn., Sept. 20th, 1905.

On motion of Dr. Gustavus Eliot (New Haven), it was referred to the Committee on Public Policy and Legislation.

Meeting adjourned to convene again at 9 A. M., on the following morning.

MORNING SESSION, THURSDAY, MAY 24, 1906.

The meeting was called to order at 9 A.M., by the President, Dr. Wordin.

In the absence of the Secretary, who was attending the meeting of the Council as its clerk, it was moved that the reading of the minutes of the sessions on the day previous be deferred for ten minutes. Carried. It was then moved that each recommendation of the special committee to consider the report of the committee on Public Policy and Legislation be considered separately. Dr. Hotchkiss, as chairman of this committee, then read its first recommendation.

This committee believe that it is not advisable, at this time, to attempt to make any revision of the present system of licensing practitioners, especially regarding the giving to the other two societies of a representation so out of proportion to their numerical value.

Discussion by Dr. E. J. McKnight (Hartford), Dr. C. D. Tuttle (New Haven), Dr. D. Chester Brown (Danbury), and Dr. Gustavus Eliot (New Haven). The recommendation of the special committee was finally accepted.

The Secretary then read the minutes of the previous day's session.

The next business was the report of Dr. Shepherd (Hartford), the chairman of the Council, as chairman of the nominating committee.

Dr. Shepherd: Mr. President, I have the honor to present the following nominations:

NOMINATIONS.

President.

WILLIAM L. HIGGINS, *South Coventry.*

Vice-Presidents.

CHARLES E. BRAYTON, *Stonington.*

SAMUEL D. GILBERT, *New Haven.*

Secretary.

WALTER R. STEINER, *Hartford.*

Treasurer.

J. H. TOWNSEND, *New Haven.*

Committee on Scientific Work.

E. J. McKnight, S. B. Overlock, W. R. Steiner.

Committee on Medical Examinations.

S. M. Garlick, to succeed himself.

Committee on Public Policy and Legislation.

E. J. McKnight, Hartford, C. S. Rodman, New Haven,

J. G. Stanton, New London, J. W. Wright, Fairfield,

S. B. Overlock, Windham, Elias Pratt, Litchfield,

Charles E. Stanley, Middlesex, Eli P. Flint, Tolland,

President and Secretary.

Committee on Honorary Members and Degrees.

W. H. Carmalt, New Haven, C. C. Beach, Hartford,

I. L. Hamant, Norfolk.

Delegate to the House of Delegates of the American Medical Association.

George R. Shepherd, Hartford.

Delegates to the Rhode Island Medical Society.

R. Robinson, Danielson, C. B. Graves, New London.

Delegates to the Massachusetts Medical Society.

A. B. Coleburn, Middletown, J. C. Lynch, Bridgeport.

Delegates to the Vermont State Medical Society.

E. O. Winship, Rockville, C. J. Bartlett, New Haven.

Delegates to the New Hampshire Medical Society.

S. B. Overlock, Pomfret, C. E. Brayton, Stonington.

Delegates to the Maine Medical Society.

H. W. Ring, New Haven, R. S. Goodwin, Thomaston.

Delegates to the New York State Medical Association.

O. T. Osborne, New Haven, H. S. Miles, Bridgeport.

Delegates to the Medical Society of New Jersey.

M. C. Hazen, Haddam, F. W. Stevens, Bridgeport.

Delegates to the Medical Society of the State of Pennsylvania.

H. G. Howe, Hartford, E. J. McKnight, Hartford.

Dr. C. J. Foote (New Haven): Mr. Chairman, inasmuch as there is a question about to be brought before the House of Delegates for discussion, I would like to rise to a point of order and get the decision of the chair. Certain members of the Council have been put by the nominating committee on the ballot for office. It does not seem to me that members of the Council ought to nominate themselves. Therefore, I rise to the point of order and ask for a decision by the chair.

The President: The Board of Councilors consists of eight men, one from each county, and I should think it was competent for these eight men to select one of their own number, just as it is competent for members of a committee to select one of their own number, which is very frequently done. I should think it was proper for them to nominate one of their own number. Does anybody question the opinion of the chair?

Dr. Gustavus Eliot (New Haven): Mr. President, I should like to inquire if there is anything in the by-laws covering that point?

The President: There is nothing concerning this.

On motion of Dr. E. J. McKnight (Hartford), the Secretary cast the ballot for these nominees, after the name of Dr. John G. Stanton (New London) was substituted for that of Dr. H. H. Heyer (New London) on the Committee on Public Policy and Legislation. The above nominees were then declared elected.

Adjourned to meet in the afternoon, at the call of the President.

AFTERNOON SESSION, THURSDAY, MAY 24, 1906.

The meeting was called to order at 4:15 P. M., by the President, Dr. Wordin.

The following recommendations were read of the special committee to consider the report of the committee on Public Policy and Legislation, by Dr. D. Chester Brown (Danbury), in the absence of Dr. N. R. Hotchkiss (New Haven).

We recommend that the Committee on Public Policy and Legislation be instructed to draft a bill to meet the provisions in the recommendation concerning Proprietary Medicines and the Adulteration of Food, and present the same for action at the next meeting of the House of Delegates.

Dr. E. J. McKnight (Hartford): I will say that the committee took this matter up some time ago. A bill has already been drawn up, supplementing the bill which is before Congress. Of course, the national legislature cannot interfere with our state rights. The bill as it has been drawn will simply supplement the national bill and take care of our interests in the state, while the national law will prevent the carrying of adulterated food from one state to another. I think such a bill should be introduced into our legislature and carried through if possible. I move we accept the report.

The President: Motion is made by Dr. McKnight that we accept the report which the committee make.

Dr. D. Chester Brown (Danbury): I would like to make an amendment to that. It was intended to relieve the Committee on Public Policy and Legislation from the burden of preparing and drafting this bill, and to have it submitted to the House of Delegates for their consideration. However, if the bill is already drafted I would recommend that the committee just mentioned

take up such a bill and that it be presented to the legislature by them.

Motion adopted.

Dr. D. Chester Brown (continuing his committee's report):

Under the law, the County Health Officer, being a lawyer, is empowered, and it is his duty, to prosecute all cases of illegal practice occurring in his jurisdiction. We would therefore recommend that the members of the Committee on Public Policy and Legislation, from the county in which the offense is alleged to have occurred, act in association with the County Health Officer in all cases of prosecution for illegal practice.

Discussion by Dr. E. J. McKnight (Hartford), Dr. W. S. Randall (Shelton), Dr. C. A. Tuttle (New Haven), and Dr. D. Chester Brown (Danbury). Motion adopted unanimously.

Dr. D. Chester Brown (continuing his committee's report):

We recommend that the Committee on Public Policy and Legislation be empowered to make an agreement with a reputable attorney who shall be considered the legal counsel of the Connecticut State Medical Society on all matters requiring legal advice.

We recommend that the question of the ambiguity of the law regarding Medical Practice be referred to the legal adviser whom the committee shall select and that the committee be authorized to take such action as may be deemed necessary on receipt of such advice.

Respectfully submitted,

N. R. HOTCHKISS,

D. C. BROWN,

E. O. WINSHIP.

Motion was then made that the report of the special committee be accepted and that the Committee on Public Policy and Legislation be authorized to select some attorney who shall be considered the attorney of the Society in all cases where legal advice is needed. Adopted.

Dr. D. Chester Brown (Danbury): I notice there was nothing suggested in this report, as handed to me, regarding the anti-vaccination law, and in the discussion which was had yesterday

morning, it was suggested that the expenses be met by subscription. It was referred to in the report of the Committee on Public Policy and Legislation.

Dr. E. J. McKnight (Hartford): It was suggested a year ago that the expenses be met by the voluntary subscription of one dollar from each member of the Society. The different members of the Committee on Public Policy and Legislation were to collect what they could in one dollar subscriptions from the members of the Society, residing in their counties. I should like to know if we have the authority of the Society to do this. This plan might also help to defray the expenses of the legal adviser. The matter has not been acted upon.

It was then moved, seconded, and adopted that the Committee on Public Policy and Legislation be empowered to collect a fund for printing and circulating the pamphlet on vaccination.

The President: Dr. McKnight was chairman of the committee to consider the suggestions contained in the reports of the President, the Secretary, and the Chairman of the Council; has he any remarks to make on his report?

Dr. E. J. McKnight (Hartford): We considered the amendments to our by-laws, drawn up in accordance with the suggestions. I think the amendments are complete and can be acted upon by just reading them over and then acting on them. In fact, as they were read yesterday, I do not think it will be necessary to re-read them.

The President: Gentlemen, you have heard the report of the special committee. Do you wish to act upon the amendments separately?

Dr. W. H. Donaldson (Fairfield): Mr. President, I move that the report of the committee be accepted and that the recommendations therein contained be adopted. Motion adopted.

The President: There were also the amendments suggested by Dr. Eliot, which ought to be acted upon.

It was then moved, seconded, and adopted that the county secretaries, for the coming year, shall receive five per cent. of the fees collected as compensation for their work, and that five per cent. also shall be retained by the county secretaries for the expenses of the county associations.

Dr. W. H. Donaldson's amendments were then discussed and on motion of Dr. W. H. Donaldson were laid on the table for another year.

The appropriation of \$250 for a memorial to Dr. N. S. Davis, the founder of the American Medical Association, was next considered.

On motion of Dr. W. S. Randall (Shelton), it was referred to the Council with power to act.

Motion carried.

Dr. E. J. McKnight (Hartford): I move we meet in Hartford on the fourth Wednesday and Thursday of May, 1907. Carried.

The House of Delegates then adjourned

The Banquet.

The annual banquet was held at the New Haven House on Thursday evening, May 24th, at 8 p. m. Sixty-two members of the society were present. Dr. B. Austin Cheney acted as toastmaster. The following toasts were responded to:

| | |
|-----------------------------|---------------------------|
| CONNECTICUT MEDICINE, | Nathaniel E. Wordin, M.D. |
| CONNECTICUT TRANSPORTATION, | T. E. Byrnes. |
| CONNECTICUT AUTOMOBILING, | R. A. McDonnell, M.D. |
| CONNECTICUT LEGISLATURE, | John Q. Tilson. |
| CONNECTICUT PROSPERITY, | Oliver C. Smith, M.D. |

CHARTER AND BY-LAWS.



Resolution Amending the Charter of the Connecticut Medical Society.

GENERAL ASSEMBLY.

JANUARY SESSION, A.D. 1905.

Resolved by this Assembly:

Section 1. That the charter of the Connecticut Medical Society, approved June 5, 1834, and as the same has been amended from time to time, be and the same is hereby amended so as to read as follows:

That all persons who are now members of the Connecticut Medical Society and all physicians and surgeons who shall hereafter be associated with them in pursuance of the provisions of this resolution shall be and remain a body politic and corporate by the name of The Connecticut State Medical Society; and by that name they and their successors shall and may have perpetual succession; shall be capable of suing and being sued, pleading and being impleaded, in all suits of whatever name and nature; may have a common seal and may alter the same at pleasure; and may also purchase, receive, hold, and convey any estate, real or personal, to an amount not exceeding one hundred thousand dollars.

Sec. 2. The superintendence and management of the corporation shall be vested in a board to be known and called by the name of The House of Delegates of the Connecticut State Medical Society, which board shall have power to establish offices in said corporation and prescribe the duties of the several officers and of the members of said corporation, and may fix their compensation; to establish the conditions of admission to and dismissal and expulsion from said society; to lay a tax from time to time upon the members, not exceeding five dollars in each year and to collect the same; to hold and dispose of all moneys and other property belonging to the corporation in such manner as they may deem proper to promote the objects and interests of the society; and in general to make such by-laws and regulations for the due government of the society, not repugnant to the laws of the United States or of this state as may be deemed necessary.

Sec. 3. The House of Delegates of The Connecticut State Medical Society shall be composed of (1) ex officio, the president and secretary of the Society; (2) delegates to be elected annually as hereinafter provided, by the several county medical associations in this state which heretofore have been and now are affiliated with The Connecticut Medical Society; and (3) eight councilors to be elected from time to time as hereinafter provided.

Sec. 4. An annual meeting of the corporation for the election of officers and such other business as may from time to time arise, shall be held during the month of May in each year and upon such day in said month as the house of delegates shall from time to time prescribe.

Sec. 5. At a meeting to be held at least twenty days in advance of the annual meeting of the corporation in each year, every affiliated county association shall elect a delegate or delegates to represent it in the house of delegates of this society in the proportion of one delegate to each thirty-five members, or any part of that number, and the secretary of such affiliated county association shall send a list of such delegates to the secretary of this corporation at least twenty days before the date of said annual meeting.

Sec. 6. The first councilors shall be appointed by the president, one from each county, who shall serve for one year or until their successors shall be elected. At their annual meeting in the year 1906, each affiliated county medical association shall elect one councilor, of whom those elected in Hartford, New London, Windham, and Middlesex counties shall serve for one year, and those elected in New Haven, Fairfield, Litchfield, and Tolland counties shall serve for two years; and at the expiration of the term of office of the councilors so elected, each affiliated county medical association shall, biennially thereafter, elect a councilor, who shall serve for two years.

Sec. 7. The secretary of every affiliated county medical association in this state shall, in May, 1905, and annually thereafter, at least ten days before the annual meeting of the society, file with its secretary a list of all members of said respective county associations who are at the time in good and regular standing, and thereupon all such persons shall become and be members of The Connecticut State Medical Society without further action.

The Connecticut State Medical Society.

BY-LAWS.

CHAPTER I.

Section 1. Name. The name and title of this organization shall be the Connecticut State Medical Society.

Sec. 2. Purposes of the Society. The purposes of this society shall be to federate and bring into one compact organization the entire medical profession of the State of Connecticut, and to unite with similar societies of other States to form the American Medical Association; to extend medical knowledge and advance medical science; to elevate the standard of medical education, and to secure the enactment and enforcement of just medical laws; to promote friendly intercourse among physicians; to guard and foster the material interests of its members and to protect them against imposition; and to enlighten and direct public opinion in regard to the great problems of State medicine, so that the profession shall become more capable and honorable within itself, and more useful to the public, in the prevention and cure of disease, and in prolonging and adding comfort to life.

Sec. 3. Component Associations. Component Associations shall consist of those county medical associations which heretofore have been and now are affiliated with the Connecticut Medical Society.

Sec. 4. Composition of Society. This Society shall consist of members, delegates, guests, and honorary members.

Sec. 5. Members. Members of this Society shall be members of the component county medical associations.

Sec. 6. Delegates. Delegates shall be those members who are elected in accordance with the charter and by-laws to represent their respective component associations in the house of delegates of this Society.

Sec. 7. Guests. Any distinguished physician not a resident of this State who is a member of his own State Association, may become a guest during any Annual Session on invitation of the officers of this Society and shall be accorded the privilege of participating in all the scientific work for that Session.

Sec. 8. Honorary Members. Eminent physicians, not residents of this State, may be elected Honorary Members by a major vote of the House of Delegates after nomination of one year, but such shall not exceed three in any one year.

Honorary Members shall have all the privileges accorded by Sec. 7 to Guests.

CHAPTER II.—MEMBERSHIP.

Section 1. The name of a physician upon the properly certified roster of members of a component association, who has paid his annual assessment, shall be prima facie evidence of membership in this Society.

The annual tax shall be collected from all such members except the secretaries of County Medical Associations, but the taxes of any member may be remitted by vote of the House of Delegates upon recommendation of any County Medical Association.

Sec. 2. Any person who is under sentence of suspension or expulsion from a component association, or whose name has been dropped from its roll of members, shall not be entitled to any of the rights or benefits of the Society, nor shall he be permitted to take part in any of its proceedings until he has been relieved of such disability.

Sec. 3. Each member in attendance at the Annual Session shall enter his name on the registration book, indicating the component association of which he is a member.

CHAPTER III.—HOUSE OF DELEGATES.

Section 1. The House of Delegates shall be the legislative and business body of the Society, and shall consist of (1) delegates elected by the component county associations; (2) the Councilors; and (3) ex officio, the President and Secretary of this Society.

Sec. 2. The House of Delegates shall meet on the first day of the annual session. It may adjourn from time to time as may be necessary to complete its business, provided that its hours shall conflict as little as possible with the General Meetings. The order of business shall be arranged as a separate section of the programme.

Sec. 3. Each component association shall be entitled to send to the House of Delegates each year, one delegate for every thirty-five members, or any part of that number.

Sec. 4. Fifteen delegates shall constitute a quorum.

Sec. 5. It shall, through its officers, Council, and otherwise, give diligent attention to and foster the scientific work and spirit of the Society, and shall constantly strive to make each Annual Session a stepping-stone to further advancement.

Sec. 6. It shall consider and advise as to the material interests of the profession, and of the public in those important matters wherein it is dependent upon the profession, and shall use its influence to secure and enforce all proper medical and public-health legislation, and to diffuse popular information in relation thereto.

Sec. 7. It shall make careful inquiry into the condition of the profession of each county in the state, and shall have authority to adopt such methods as may be deemed most efficient for building up and increasing the interests in such county associations as already exist and for organizing the profession in counties where associations do not exist. It shall especially and systematically endeavor to promote friendly intercourse among physicians of the same locality, and shall continue these efforts until every physician in every county of the state who can be made reputable has been brought under medical society influence.

Sec. 8. It shall encourage post-graduate and research work, as well as home study, and shall endeavor to have the results discussed and utilized.

Sec. 9. It shall elect representatives to the House of Delegates of the American Medical Association in accordance with the Constitution and By-Laws of that body.

Sec. 10. It shall have authority to appoint committees for special purposes from among members of the Society who are not members of the House of Delegates.

Such committees shall report to the House of Delegates, and may be present and participate in the debate on their reports.

Sec. 11. It shall approve all memorials and resolutions issued in the name of the Society before the same shall become effective.

Sec. 12. Sections and District Societies. The House of Delegates may provide for a division of the scientific work of the Society into appropriate sections, and for the organization of such Councilor District Associations as will promote the best interests

of the profession, such associations to be composed exclusively of members of component county associations.

CHAPTER IV.—SESSIONS AND MEETINGS.

Section 1. The Society shall hold an annual session during which there shall be held daily General Meetings which shall be open to all registered members, guests, and honorary members.

Sec. 2. The time and place for holding each annual session shall be fixed by the House of Delegates.

Sec. 3. Special meetings of either the Society or the House of Delegates shall be called by the President, on petition of ten (10) delegates or fifty (50) members.

Sec. 4. General Meetings. All registered members may attend and participate in the proceedings and discussions of the General Meetings and of the Sections. The General Meetings shall be presided over by the President or by one of the Vice-Presidents, and before them shall be delivered the address of the President and the orations.

Sec. 5. The General Meeting may recommend to the House of Delegates the appointment of committees or commissions for scientific investigation of special interest and importance to the profession and the public.

CHAPTER V.—OFFICERS.

Section 1. The officers of this Society shall be a President, two Vice-Presidents, a Secretary, a Treasurer, and eight Councilors.

Sec. 2. The officers, except the Councilors, shall be elected annually. The first Councilors shall be appointed by the President, one from each county, who shall serve for one year, or until their successors shall be elected. At their annual meetings in the year 1906, each affiliated county medical association shall elect one councilor, of whom those elected in Hartford, New London, Windham, and Middlesex counties shall serve for one year, and those elected in New Haven, Fairfield, Litchfield, and Tolland counties shall serve for two years, and at the expiration of the term of office of the councilors so elected, each affiliated county medical association shall, biennially, elect a councilor, who shall serve for two years.

Sec. 3. All elections shall be by ballot, and a majority of the votes cast shall be necessary to elect.

Sec. 4. The election of officers shall be the first order of business of the House of Delegates after the reading of the minutes on the morning of the last day of the General Session, but no delegate shall be eligible to any office named in the preceding section, except that of councilor, and no person shall be elected to any such office who has not been a member of the Society for the past two years.

CHAPTER VI.—DUTIES OF OFFICERS.

Section 1. The President shall preside at all meetings of the Society and of the House of Delegates; shall appoint all committees not otherwise provided for; he shall deliver an annual address at such time as may be arranged, and perform such other duties as custom and parliamentary usage may require. He shall be the real head of the profession of the State during his term of office, and, as far as practicable, shall visit by appointment the various sections of the State and assist the Councilors in building up the county associations and in making their work more practical and useful.

Sec. 2. The Vice-Presidents shall assist the President in the discharge of his duties. In the event of the President's death, resignation, or removal, the Council shall select one of the Vice-Presidents to succeed him.

Sec. 3. The Treasurer shall give bond in the sum of \$1,000, the manner of bonding to be left to the Council. He shall demand and receive all funds due the Society, together with the bequests and donations. He shall pay money out of the treasury only on a written order of the President, countersigned by the Secretary; he shall subject his accounts to such examination as the House of Delegates may order, and he shall annually render an account of his doings and of the state of the funds in his hands.

Sec. 4. The Secretary shall attend the General Meetings of the Society and the meetings of the House of Delegates, and shall keep minutes of their respective proceedings in separate record books. He shall be ex officio Secretary of the Council. He shall be custodian of all record books and papers belonging to the Society, except such as properly belong to the Treasurer, and shall keep account of and promptly turn over to the Treasurer all funds of the Society which come into his hands. He shall provide

for the registration of the members and delegates of the annual sessions. He shall, with the co-operation of the secretaries of the component associations, keep a card-index register of all the legal practitioners of the State by counties, noting on each his status in relation to his county association, and, on request, shall transmit a copy of this list to the American Medical Association. He shall aid the Councilors in the organization and improvement of the county associations and in the extension of the power and usefulness of this Society. He shall conduct the official correspondence, notifying members of meetings, officers of their election, and committees of their appointment and duties. He shall employ such assistance as may be ordered by the House of Delegates, and shall make an annual report to the House of Delegates. He shall supply each component association with the necessary blanks for making their annual reports. Acting with the Committee on Scientific Work, he shall prepare and issue all programmes. The amount of his salary shall be fixed by the Council.

CHAPTER VII.—COUNCIL.

Section 1. The Council shall consist of one Councilor from each county and the President and Secretary *ex officio*. It shall be the Finance Committee of the House of Delegates. Five Councilors shall constitute a quorum.

Sec. 2. The Council shall meet daily during the Session, and at such other times as necessity may require, subject to the call of the chairman or on petition of three Councilors. It shall meet on the last day of the annual session of the Society to organize and outline work for the ensuing year. It shall elect a chairman and a clerk, who, in the absence of the Secretary of the Society, shall keep a record of its proceedings. It shall, through its chairman, make an annual report to the House of Delegates.

Sec. 3. Each Councilor shall be organizer, peacemaker, and censor for his district. He shall visit the counties in his district at least once a year for the purpose of organizing component associations where none exists; for inquiring into the condition of the profession, and for improving and increasing the zeal of the county associations and their members. He shall make an annual report

of his work and of the condition of the profession of each county in his district at the Annual Session of the House of Delegates.

Sec. 4. The Council shall be the Board of Censors of the Society. It shall consider all questions involving the rights and standing of members, whether in relation to other members, to the component associations, or to this Society. All questions of an ethical nature brought before the House of Delegates or the General Meeting shall be referred to the Council without discussion. It shall hear and decide all questions of discipline affecting the conduct of members or component associations on which an appeal is taken from the decision of an individual Councilor, and its decision in all such matters shall be final.

Sec. 5. The Council shall provide for and superintend the publication and distribution of all proceedings, transactions, and memoirs of the Society, and shall have authority to appoint an editor and such assistants as it deems necessary. All money received by the Council and its agents, resulting from the discharge of the duties assigned to them, must be paid to the Treasurer of the Society. As the Finance Committee, it shall annually audit the accounts of the Treasurer and Secretary and other agents of this Society, and present a statement of the same in its annual report to the House of Delegates, which report shall also specify the character and cost of all the publications of the Society during the year, and the amount of all other property belonging to the Society under its control, with such suggestions as it may deem necessary. In the event of a vacancy in the office of the Secretary or the Treasurer, the Council shall fill the vacancy until the next annual election.

CHAPTER VIII.—COMMITTEES.

Section 1. The standing committees shall be as follows:

A Committee on Scientific Work.

A Committee on Public Policy and Legislation.

A Committee on Medical Examination and Medical Education.

A Committee on Honorary Members.

A Committee on Arrangement, and such other committees as may be necessary. Such committees shall be elected by the House of Delegates unless otherwise provided.

Sec. 2. The Committee on Scientific Work shall consist of three members, of which the Secretary shall be one, and shall determine the character and scope of the scientific proceedings of the Society for each session, subject to the instructions of the House of Delegates. Fifteen days previous to each annual session it shall prepare and issue a programme announcing the order in which papers, discussions and other business shall be presented.

Sec. 3. The Committee on Public Policy and Legislation shall consist of one member from each component association, and the President and Secretary. Under the direction of the House of Delegates it shall represent the Society in securing and enforcing legislation in the interest of the public health and scientific medicine. It shall keep in touch with professional and public opinion, shall endeavor to shape legislation so as to secure the best results for the whole people and shall strive to organize professional influence so as to promote the general good of the community in local, state, and national affairs and elections.

Sec. 4. The Committee on Medical Examination and Medical Education shall consist of five members who shall be appointed in accordance with Sec. 4717 of the general statutes of the State of Connecticut. The committee shall conduct the medical examination of candidates for certificates of qualifications for license to practice medicine in the State in accord with the requirements of the Medical Practice Act. It shall annually present a written report to the House of Delegates. The committee shall also be a committee on medical education and shall co-operate with the council of education of the American Medical Association in the effort to elevate the standard of medical education in the United States.

Sec. 5. The Committee on Honorary Members shall present annually to the House of Delegates the names of not more than three eminent physicians, not residents of this state, as candidates for honorary membership in this Society. Such candidates may be elected honorary members in accordance with the provisions of Chap. I, Sec. 8, of the By-Laws.

Sec. 6. The Committee of Arrangements shall be appointed by the component association in which the Annual Session is to be held. It shall provide suitable accommodations for the meeting

places of the Society and of the House of Delegates, and of their respective committees. Its chairman shall report an outline of the arrangements to the Secretary for publication in the programme, and shall make additional announcements during the session as occasion may require.

CHAPTER IX.—RECIPROCITY OF MEMBERSHIP WITH OTHER STATE SOCIETIES.

In order to broaden professional fellowship this Society is ready to arrange with other State Medical Societies for an interchange of certificates of membership, so that members moving from one State to another may avoid the formality of re-election.

CHAPTER X.—FUNDS AND EXPENSES.

Funds shall be raised by an equal per capita assessment on each component association. The amount of the assessment shall be fixed by the House of Delegates, but shall not exceed the sum of \$3.00 per capita per annum except on a four-fifths vote of the delegates present. Funds may also be raised by voluntary contributions, from the Society's publications, and in any other manner approved by the House of Delegates. Funds may be appropriated by the House of Delegates to defray the expenses of the Society, for publications, and for such other purposes as will promote the welfare of the profession. All resolutions appropriating funds must be referred to the Finance Committee before action is taken thereon.

CHAPTER XI.—REFERENDUM.

Section 1. A General Meeting of the Society may, by a two-thirds vote of the members present, order a general referendum on any question pending before the House of Delegates, and when so ordered the House of Delegates shall submit such question to the members of the Society, who may vote by mail or in person, and, if the members voting shall comprise a majority of all the members of the Society, a majority of such vote shall determine the question and be binding on the House of Delegates.

Sec. 2. The House of Delegates may, by a two-thirds vote of its members present, submit any question before it to a general referendum, as provided in the preceding section, and the result shall be binding on the House of Delegates.

CHAPTER XII.—COUNTY ASSOCIATIONS.

Section 1. All county associations now in affiliation with the Connecticut Medical Society shall be component parts of this Society.

Sec. 2. Each county association shall judge of the qualification of its own members, but as such associations are the only portals to this society and to the American Medical Association, every reputable and legally registered physician who does not practice or claim to practice or lend his support to any exclusive system of medicine, shall be entitled to membership.

Sec. 3. Any County Medical Association may suspend or expel any member who is guilty of improper or unprofessional conduct, by a two-thirds vote of the members present and voting at any regular meeting, provided due notice has been given on the programme of said meeting at least ten days before its session. When from any cause a member of the Connecticut State Medical Society ceases to be a member of one of the component county medical associations, his membership in the Connecticut State Medical Society shall terminate, but any physician who may feel aggrieved by the action of the association of his county in refusing him membership or in suspending or expelling him, shall have the right to appeal to the Council, and its decisions shall be final.

Sec. 4. In hearing appeals the Council may admit oral or written evidence as in its judgment will be best and to most fairly present the facts, but in case of every appeal, both as a Board and as individual councilors in district and county work, efforts at conciliation and compromise shall precede all such hearings.

Sec. 5. When a member in good standing in a component association moves to another county in this State, his name, on request, shall be transferred, without cost, to the roster of the county into whose jurisdiction he moves.

Sec. 6. A physician living on or near a county line may hold his membership in that county most convenient for him to attend, on permission of the association in whose jurisdiction he resides.

Sec. 7. Each component association shall have general direction of the affairs of the profession in its county, and its influence shall be constantly exerted for bettering the scientific, moral, and material condition of every physician in the county; and systematic

efforts shall be made by each member, and by the Society as a whole, to increase the membership until it embraces every qualified physician in the county.

Sec. 8. At some meeting in advance of the Annual Session of this Society, each county association shall elect a delegate or delegates to represent it in the House of Delegates of this Society in the proportion of one delegate to each thirty-five members, or any part of that number, and the Secretary of the Association shall send a list of such delegates to the Secretary of this Society at least twenty days before the Annual Session.

Sec. 9. The Secretary of each component association shall keep a roster of its members and of the non-affiliated registered physicians of the county, in which shall be shown the full name, address, college and date of graduation, date of registration in this State, and such other information as may be deemed necessary. In keeping such roster the Secretary shall note any changes in the personnel of the profession by death, or by removal to or from the county, and in making his annual report he shall be certain to account for every physician who has lived in the county during the year.

Sec. 10. The Secretary of each component association shall forward its assessment to the Treasurer at least ten days before the Annual Session and its roster of officers and list of non-affiliated physicians of the county to the Secretary of this Society each year twenty days before the Annual Session.

Sec. 11. The several county medical associations shall have power to adjourn; to call special meetings, as they shall deem expedient; and to adopt such by-laws as they find desirable not contrary to the laws of this State or the charter and by-laws of the Connecticut State Medical Society.

CHAPTER XIII.—MISCELLANEOUS.

Section 1. No address or paper before this Society, except those of the President and orators, shall occupy more than twenty minutes in its delivery; and no member shall speak longer than five minutes, nor more than once on any subject except by unanimous consent.

Sec. 2. All papers read before the Society or any of the Sections shall become its property. Each paper shall be deposited with the Secretary when read. No paper shall be read before this Society which has been previously published or read before any other organization.

Sec. 3. The deliberations of this Society shall be governed by parliamentary usage as contained in Roberts' Rules of Order, when not in conflict with the charter and by-laws.

Sec. 4. The Principles of Medical Ethics of the American Medical Association shall govern the conduct of members in their relations to each other and to the public.

CHAPTER XIV.—AMENDMENTS.

These By-Laws may be amended at any Annual Session by a majority vote of all the delegates present at that session, after the amendment has been laid on the table for one day.

PRESIDENT'S ADDRESS.



The President's Address.

NATHANIEL E. WORDIN, Bridgeport.

When I sat before this assembly one year ago and the surprising announcement was brought to me that I had been nominated for President of this Society (an honor which I much appreciate, the responsibility and largeness of which have grown upon me, and for which I hereby make my acknowledgments), there immediately loomed up before me the great black cloud of the annual address. It was an obstacle which I did not know how to meet, and I sank underneath it. But in a moment the air was cleared; the subject was before me, born for the time. Tuberculosis, gonorrhœa, small-pox, the close defeat of the anti-vaccinationists, the campaign of education upon which the Society itself proposed to enter, gave indication that this was the way to walk; these were the things in which the Society was interested; here were the living questions of the day to be discussed, to be kept before the people, to be acted on.

Because we shall fail of our mission, we shall fall far short of our duty, we shall live but half of our lives if we limit ourselves and our service to the treatment alone, and do not also include the prevention of disease; if we simply cure, and do not teach how to keep sickness from coming; if we limit ourselves to learning, and do not spend our lives in teaching as well; if we keep our services within the homes, where our influence is, and not be felt in the hall of legislation where it ought to be; if, above all, we show a lack of sympathy by being so absorbed in our own study that we are not concerned with the feebleness, the sickness, or the suffering of our fellows, except as we receive revenue or attain advancement.

The time is fitting: We start under new By-Laws, adopted at the instigation of the American Medical Association, whose purpose is to so unite the medical profession of the country that

they may be drawn closer together into one harmonious whole, acting as one throughout the land for whatever tends to the betterment of humanity. The purpose for which our society exists is beautifully expressed in Section 2, Chapter I of its By-laws: "The purpose of this Society shall be to federate and bring into one compact organization the entire medical profession of the State of Connecticut, and to unite with similar societies of other States to form the American Medical Association; to extend medical knowledge and advance medical science, to elevate the standard of medical education, and to secure the enactment and enforcement of just medical laws; to promote friendly intercourse among physicians; to guard and foster the material interests of its members, and to protect them against imposition, and to enlighten and direct public opinion in regard to the great problems of State medicine, so that the profession shall become more capable and honorable within itself and more useful to the public in the prevention and cure of disease and in prolonging and adding comfort to life."

These are to me inspiring sentiments. I am greatly honored in having part in such a noble purpose. My theme then is The Influence of the Medical Profession upon the State. I use the preposition advisedly. I would not for a moment consider personal influence within the State—how far or how high it may be; what positions the physician may fill; how much wealth he may accumulate—not even his success in science, the discoveries he may make or his attainments in the divine art of healing. It is not the person but the profession that I am speaking about—you collectively who are before me; every member of this Society; not one of you can escape. The influence of the medical profession should be felt upon the State in molding public opinion, in educating the people into healthful living and healthful legislating, in making its laws, and in securing their beneficent enforcement, that there may develop a strong sturdy race of bread-winners who may learn how to overcome hereditary tendencies to unsoundness of body or of mind, how to avoid acute attacks of disease, how to escape the pestilence, how to develop and properly use both brain and brawn.

Public opinion should be so educated that ignorant prejudice will find no influence among legislators. In the strifes of our

elections, in our party spirit, in the multiplicity of our laws, we are apt to forget the object for which the State was founded and for which laws are made.

Sparta was little more, physically, than a group of villages of plain, even mean, private houses — a permanent camp. The Spartan weakling was exposed on Mount Taygetus until he should prove his ability to survive or should perish, still a weakling. The old and decrepit were put out of the way as being no longer able to serve the State. The people were ruled by discipline and not by sentiment. The function of marriage was for the perpetuation of the State and the mother in sending her son to battle gave him his shield with the laconic injunction to return "With this or on it." Sparta had no Themistocles or Pericles, no Solon or Plato. Leonidas and Lysander were her heroes. She produced no great thinkers or philosophers; her great men are eminent as soldiers, not able and enlightened statesmen. The Spartan existed for the State or he was not allowed to exist at all. Her men were her walls of defense.

But government has changed; civilization has changed it. Gérôme's startling pictures, "*Pollice Verso*" and "*The Gladiators before Cæsar*" and "*Tullia driving over her Father's corpse*," by Ernst Hildebrand, are characteristic of the times of the Tarquins and Nero. The persecution of the Waldenses, the fires of Smithfield, the massacre of St. Bartholomew, can never be repeated. When Louis XVI said, "*L'Etat, c'est moi*," I am the State, he expressed the essence of the doctrine of unlimited power. Turkey and Russia are the only embodiments of that doctrine to-day, and the Czar in upholding it, within a short time, has nearly lost his crown.

Our Magna Charta declares that men are created equal. But equality is found nowhere. As it would produce stagnation in the physical, so it would effect insanity in the moral and social world. If all heavenly bodies were equally bulky, at equal distances and of equal attraction, there would be no motion, no seasons, no vegetation. Equality in slavery is not liberty.

Men are entitled to liberty declares the great document, yet ever since the thunderings of Sinai, nay, ever since the first man

walked in Eden, the "thou shalt" and "thou shalt not," have sounded in his ears and have walked with him.

It is a principle of law that we should use our rights so as not to interfere with those of another. Hence, because no man liveth unto himself, because every man has equal rights before the law, because the meum is constantly opposing the tuum, laws are found necessary. Society, the State, cannot exist without the protection of law. Necessarily these laws must bear heavily on some. At some time they may be felt by everybody. The wise, the just, the man of culture, of broad view, will submit. The ignorant, the fanatic and the crank, the demagogue who seeks notoriety, the politician who seeks leadership, thinks he is wronged or says he is and raises opposition. But the greatest good to the greatest number is what the law should secure. The chief function of the State is to maintain law and order; to defend every citizen against the aggression of other citizens.

The State interferes with personal liberty in regulating the traffic in intoxicating liquor. This is done, not on the ground that the State should protect the fool against the effects of his folly, but on the ground that the habit fills the workhouses and prisons which have to be maintained out of the earnings of the sober and thrifty; furthermore that drink incapacitates its habitués for labor and pauperizes them and their families so that they are a burden upon the community, and because drink leaves legacies of disease and immorality to the third and fourth generations.

The State prohibits doing upon the Sabbath many things which are allowed during the six days. Business ceases by law upon that day. But this it not because of the fourth commandment in the decalogue. The State does not say, keep the Sabbath holy; it simply says, thou shalt do no work upon the Sabbath. And sociologists have determined not only that a day of rest is necessary for the greatest result of labor, but that by actual experiment the interval of seven days brings the fullest return.

The police power is inherent in every sovereignty and is for the protection of the public welfare. It is the law of overruling necessity. A man's house is his castle. In it he is secure. No police officer of the city without summons, no high sheriff of the

State, without writ, may enter unless the owner opens the door.

The health officer, be he ever so unwelcome, can not be barred out. He may demand and secure admittance. All rights have been held subject to the police power of a State and if the public safety or public morals require it, the schools are closed, traffic is stopped, even the door of one's own house, his castle, is sealed. The State cannot divest itself of the power to provide for the lives, the health and the public interests of its citizens.

The police power is not only insistent, but it is comprehensive, embracing every department of life. The law of necessity is the law of self-defense, and police powers have their origin in the law of necessity. The highest duties of the physician bring him in contact with this law. A person sick with smallpox has not only no right to his liberty but also has no right to be where others, either through ignorance or wilfulness, may have access to him. He is a source of infection, which will cause sickness and which may cause death. He and every member of society should be prevented from getting into such a condition, and since many would decline and more would be indifferent so long as no epidemic prevailed and a few either through prejudice or superstition or conscientious scruples or so as to have their own way would endanger the safety of the community, the State, to protect itself, establishes compulsory vaccination by law. It is for the protection of the community against a loathsome and fatal disease, which by its ravages and by its amenity to prevention, has taught us the wisdom, the necessity of vaccination. This saves the State from loss by sickness and by death. The majority of persons treat it and consider that it ought to be treated as an offence. Compulsion is justifiable when it is so imperative that we must use it to save ourselves. In different portions of the country the prevalence of smallpox in epidemic form is determined in each instance by the thoroughness with which the different communities have been vaccinated.

When men shall have become more mindful of their fellows, when statute laws shall have fallen into uselessness, when the decalogue shall be the only law, when the golden rule shall have become the guide and government of our lives and we recognize the fact that we are our brother's keeper, the police power must

still be used to tell us when the rights of our neighbors begin and when we begin to trespass upon them.

Our profession has attained to a position where it can demand this action by its achievements and its advancing steps of science and discovery through the years, from Aristotle, B. C., 350, to the latest achievements — Praxagoras of Cos and Herophilus, anatomists; Galen at Alexandria, the center of knowledge; Andrew Vesalius, instructor at three universities and physician at two courts; William Harvey, discoveror of the circulation of the blood; Edward Jenner, who announced in 1798 the protective power of vaccination against smallpox; John Tyndall, who revealed the motes which sparkle in the sun-beam; Pasteur, whose experiments with fermentation and putrefaction saved to France its greatest industry, and whose inoculations with cultivated virus were the beginning of the serum treatment of disease; and Robert Koch, the devotee, who whether in Berlin or Cairo unlocked the secrets of disease and has shown to the world that many of the old-time scourges of the world are caused by minute organisms which can be killed, that these diseases are therefore communicable and preventable and only exist through the carelessness — the criminal negligence — of some one, be it doctor, nurse, or attendant.

Typhus fever, an acute, specific, highly contagious disease, endemic, epidemic, jail fever, camp fever, ship fever, a filth disease, a common scourge formerly in times of famine, with a mortality of 12-20%, has disappeared almost entirely from the list. It was a disease of crowded localities; the poor and ill-fed were its principal victims; the dark, damp hold of the ship was oftentimes its breeding place. One of the most impressive scenes of my life occurred to me as I stood upon the edge of a little plain all furrowed and ridged with hummocks. It was at the great quarantine station of Grosse Isle, in the St. Lawrence river, where so many immigrants enter, and crossing the dividing line make their homes among the cities and the prairies of our West. There was no habitation near, there was no life about. A little marble monument had been set up to mark the spot. Approaching it I read — "Ten thousand immigrants seeking a home upon these shores found only

a grave." Time had discolored the stone and its letters had not been lately cut. And yet, with all the increased influx from Europe, ten thousand in a day sometimes arriving now, what has become of typhus fever? What physician has had a case of it to treat? Who has ever seen a case? That little pile marks one of the greatest tributes to preventive medicine; the sad and solemn scene is eloquent with praises of quarantine and disinfection, fresh air and cleanliness enforced by law made for the safety of the people.

The solution of the problem how to prevent outbreaks of yellow fever is one of the most recent and remarkable achievements of sanitary science. This pest, where it has prevailed, has not only destroyed life, but it has injured commerce and prevented trade. Natives have fled from it, the traveler has shunned its lurking place. Ships have passed by the open harbor where it was known to be and the gathered crops have lain piled upon the wharves waiting in vain for shipment. But no sooner is the Spanish war ended and the grip of Spain loosed from the last of her colonies in the Western hemisphere than a Harvard medical graduate, good at fighting either human or animal pests, rides not only the city of Havana but the Island of Cuba of this much dreaded disease, and sanitary scientists predict confidently that the world will soon be rid of this scourge.

Smallpox is no longer a pestilence among civilized nations. This foul disease formerly decimated armies, killing more than war. In the German army not a death occurred from smallpox between 1874 and 1882. It nearly depopulated Iceland in the cold region near the pole and was still more fatal in the torrid zone, striking down millions in Mexico at the time of the Conquest. Kings and queens upon their thrones have fallen victims to it and its fetid breath has blasted, like a simoom of the desert, every one who has inhaled it. Lord Macaulay calls it the most terrible of all the messengers of death and says it was always present, filling the churchyards with corpses, leaving on those whose lives it spared the hideous traces of its power, turning the babe into a changeling at which the mother shuddered, and making the eyes and cheeks of the betrothed maiden objects of horror to

her lover. In vaccination we have an antidote, a prophylaxis, so efficient that the disease is a rarity. Thomas Jefferson, writing to Dr. Jenner as early as 1806, says:—"Sir: I have received a copy of the evidence at large, respecting the discovery of the vaccine inoculation, which you have been pleased to send me, and for which I return you my thanks. Having been among the early converts in this part of the globe, to its efficiency, I took an early part in recommending it to my countrymen. I avail myself of this occasion of rendering you a portion of the tribute of gratitude due to you from the whole human family. Medicine has never before produced any single improvement of such utility. * * * You have erased from the calendar of human afflictions one of its greatest. Yours is the comfortable reflection that mankind can never forget you have lived. Future nations will know by history that the loathsome smallpox has existed and by you has been exterminated.

Accept my fervent wishes for your health and happiness and assurances of the greatest respect and consideration."

We have passed out of the age which was fighting dragons and have come into the age which is fighting microbes—the infinitely small. Having discovered the cause of the great white plague, we are searching for its cure. No longer do its victims live like one in a chamber, whose walls, contracting day by day, shut him in closer and closer, until he sees the end of his life inevitably near. No longer does the victim live without hope. We have not conquered, but we have weakened the forces of this disease. Best of all, the people are helping in the work and without them we can do nothing.

These are some of the great triumphs of the medical profession, and this the heritage into which we have entered. To assert these facts, to maintain them, to teach them, this is the glorious privilege of the physician of today. The changes already made are as a revolution, and as the intelligence of the people increases, our opportunities for success will be greater. But we must make these things our lives—we must have the spirit within us. The causes must be kept continually before the people. We must not let them die out; we must not let them be forgotten. It surely

seems strange that there should be any opposition to measures which have been proved so beneficial and which are among the things which distinguish us from a lower civilization.

Indifference is probably the greatest evil with which we have to contend. This requires hard work to overcome. It is the same stupid lethargy as is seen in the political affairs of the city, the failure to attend caucus, the absence from the polls, which leaves the city in the hands of unscrupulous bosses and permits graft. It is so much easier to bask in the sun than to labor in the sweat of one's brow; it is pleasanter, perhaps, to keep aloof,

Far from the madding crowd's ignoble strife.

It is so much trouble to be bothered with what does not directly come to us; there's nothing in it for me, is altogether too popular a cry. We are apt to shut our eyes against a painful truth and listen to the song of the siren till she transforms us into beasts. Superstition and prejudice have some small part in it. These can only be overcome by enlightenment — education.

The demagogue, assertive, loud-mouthed, ambitious to be heard and to be a leader, to gain a following, has quite a large part in it. Against him there is no hope, no remedy, except to cut him off altogether from gaining any adherents. When one falls another rises. Argument is useless, he will not listen to reason.

The politician, keen and crafty, seeking his advancement by whatever means, buying votes either with money or by deals with his colleagues, trimming his sails to catch the popular breeze, following no higher spring of action than policy and no higher motive than self, has a part in it. A year ago, while we were sitting in our meeting, the Legislature, not far away, but too far to feel any influence from us, had nearly decided to abolish compulsory vaccination, and the bill was saved by only a few votes. There is a chance of relief from the politician. The ballot is in the hands of the people and just here is where the medical profession should make its influence felt upon the State. Education of the people will overcome every one of the oppositions I have named.

The educating must be done by those who are themselves educated in these matters — the physicians of the State, you, the members of this Society. It will be comparatively easy in times

of epidemics when the plague is among us, striking indiscriminately. Then men will gladly seek refuge in that which they had before derided.

But our aim is to keep the disease away from us altogether. We can stay the plague; it has been done time and again. When there is no danger, indifference comes and we lie supinely on our backs until our enemies have bound us hand and foot. We must not wait for the plague or the smallpox, or the cholera, or the yellow fever, for each person afflicted then becomes a source of infection, scattering broadcast the contagion, and the pestilence, indeed, walketh in darkness. Those who know must teach. This means not the physician alone, although it belongs to him primarily, but the scientist, the philanthropist, the layman as well. The physician must be in the van. And unless the teaching is not only as we visit the sick but in our walk and conversation, not only in our professional ministrations, but in all our life, unless it is constant and persistent, we shall not utterly overthrow the enemy.

Vaccination does stop the epidemic of smallpox. Boiling the water we drink and using the utmost sanitary precaution in the care of the discharges will prevent the appearance or the recurrence of typhoid fever. The occurrence of this disease is a crime; it is owing to the criminal carelessness of some one. Teach it to the nurses, teach it to the patient, proclaim it in print, enact it in your laws, live it in your lives.

Something is wrong among us when every legislative year the room of the Committee on Public Health and Safety is swarmed and the Committee itself is overrun with men making wild and astoundingly incredible assertions, using history which is very profane, having consciences which manifest themselves only in scruples; fearing vaccine lymph drawn from the humble calf as if it was fraught with living death, but making no complaint against antitoxin drawn from the noble horse, deaf to the information that the serum treatment is the advance and the advancing treatment of the day; unwilling to make a little sacrifice for a great gain, incapable of being convinced by argument.

Something is wrong among us when one of our legislators, elected to protect the people, a man so high in council as to aim

to be its highest officer, and striving for a seat in the Senate of the United States, barter away his vote on vaccination, the safety of the people, for a promise of support in gaining an office for himself. For there is all the difference in the world, says Mr. Steffens, between the man whose action springs out of the hot convictions generated under his own hat, and the man who weakly sells out his own convictions for the cash or the favor of another person. The man who uses a public office for a selfish purpose prostitutes his position and debases himself. The empire over ourselves, says Madam Roland, is the finest of empires, that of which the conquest costs us most and the possession of which is the sweetest.

There is a cure for the politician — defeat him at the polls. And that is a part of the influence of the medical profession upon the State.

It is not the business of the health officer alone to attend to these matters. His work lies along the enforcement of the law after it is made. Our work is higher because it is to create the public opinion which is to make and to sustain the law. Public opinion is the highest tribunal, beyond which and from which there can be no appeal, and I am pleading for the creation of that opinion which shall lead to the protection of health and the prevention of disease.

Nor can this duty be evaded; it cannot be shifted on to another. Each one of us lives, the center of a circle, and all the circles swung from different moving centers, include the whole. In no other way can it be done. The moment a man gets an infectious disease, he becomes a source of danger. He may scatter the infection in a crowd; he may communicate it to an individual; you yourself may sit beside him in the public conveyance; your child may wait upon him, entering at the back or at the front door of your house; and he may be innocent because he may not know.

Nor is it all that he is a source of infection. A sick person is a burden to the State, whether because he keeps a bread-winner from work by caring for him, or, whether he, a producer, is himself kept from work.

It is given to us to guard our patients from exposure, to tell them when they are in danger, to render them immune, to protect

them against the indifferent, the careless or the ignorant. Our patients means the State. Every man owes a duty to the State; every educated man also owes a larger duty and is the better able to perform that duty as his perception is clearer and his intelligence more comprehensive.

It is well to keep continually before communities the causes of these diseases and the methods which science has devised to prevent them; that the germs of disease are to be destroyed; that the germ-producing field is the sick person and that those sick with contagious diseases must be quickly watched and the disease germ not be allowed to spread; that no place is a healthy place in these times and under our conditions, without continuous care and the co-operation of the health authorities and the community itself.

Keep it before the people that it is the duty of the public to apply sanitary measures all the time; that sickness costs more than health, both as to the individual and the community; that the germ theory of disease has been firmly established by scientific investigation; that the prevention of such disease must be brought about by applying scientific methods and that the co-operation of the community is required. Keep your patients informed why certain of the sick must be isolated, why disinfection should be used in certain cases (as the dejections of typhoid fever), that epidemics are unnecessary and expensive both to the families of the sick and to the business interests of the community; that in a large number of bacterial diseases, the inciting germs have no breeding places outside the bodies of those men or animals which are their victims and that if all materials from these be at once destroyed by heat, by fire, by chemicals or in any other way, all danger of transmission is destroyed.

The new work is largely along the line of tuberculosis. The researches of the laboratory have established the fact that a bacillus is the cause of this disease. The investigations have been carefully made and the result is scarcely questioned. Clinical investigation has disclosed the fact that the disease is curable; observation and practice have shown that it is preventable. It will give great courage to the afflicted; it may prevent despair in many to know that the disease is not inherited.

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These facts have been urgently and constantly put before us by bulletins from boards of health, by lectures, by articles in leading magazines and by the secular and religious press. It has been hard for everybody to believe these things, but the truth has been demonstrated in private, in hospital and in sanatorium practice. Theory and practice here harmonize, and while we would clamor at the vault of the treasury for further appropriations for public use, we would have every consumptive's home within the State, his sanatorium where he could sleep out of doors.

There is no charm for the consumptive in the Adirondack hills aside from their natural beauty. Colorado's air is not life-giving any more than is Connecticut's. Nor is California the golden gate to him

Whose cheek has bloom
That is but mockery of the tomb.

Its fruitful soil, its balmy air, its wealth of fruit and flowers, its saw-like Sierras, have no charm to stay the germ. The hills of our own State are as efficient or can be made so. We want to teach these things to our people—that health can be found by good living; that help from this dread disease is in the open air wherever that may be; upon the abandoned farm, upon the hill side, at the very door of one's own home.

There is another form of disease which is increasing so rapidly, which has come to be so frequent and which is making such demands upon the State that some attention must be paid to it.

For we are not ourselves when nature, overcome,
Commands the mind to suffer with the body.

The medical profession makes as large claim for congratulation for its triumphs here as in any of its fields. It is only a hundred years since William Tuke, the Quaker philanthropist of York, founded his asylum and secured the enactment of proper laws for the treatment of the insane. It is less than a century since Philip Pinel, with his own hands opened the dungeons and let out into the sunlight and fresh air, the poor lunatics who had been considered as demons and whose treatment had been worse than that of the criminal. Connecticut has now come to a point where she must struggle with the problem of the care of the insane

— let me also say with the prevention of insanity. In 1880 the proportion of insane in the United States was only one to every 1,233; in 1890 it was one to 555. Statistics from the last census are not yet available.

Within our own State they cover a larger and later period of time. In 1870 there was one insane person in Connecticut to every 2,346 of the population of the State; in 1880 one to every 1,216, although it is hardly fair to compare statistics made so long ago with those of today:

In 1890, one in 545,

In 1900, one in 444,

In 1906, one in 395.

So that in this State, among the earliest to be settled, always true to its traditions, blessed with three well established colleges, with academies and high schools in almost every town, and enforcing fairly well its laws for compulsory education, there is one insane person to every three hundred and ninety-five of the population. Again, in 1880, twenty-nine per cent. of the insane of the State were of foreign birth; in 1890 this percentage had increased to thirty-nine per cent.

If we put this in another form, the native and foreign born, side by side, we will have a still stronger comparison. Of patients admitted to the Hospital at Middletown, we find, viz.:—

From 1868-1880, 63.7% were native; 36.9% were foreign born;

From 1880-1890, 60.8% were native; 39.2% were foreign born;

From 1890-1900, 60.49% were native; 39.6% were foreign born.

Thus in this comparison there is a steady decrease in the proportion of native born, a steady increase in the proportion of foreign born. Nor is this increase in the same proportion as the increase of foreign population; it exceeds it. For instance, in 1900 the foreign born population of the State comprised twenty-six per cent. of the entire number. From 1898-1902, thirty-eight per cent. of admissions were of foreign birth and parentage. In other words the twenty-six per cent. of foreign population furnished thirty-eight per cent. of the insane during those four years.

Of the immigration which comes to America, Connecticut receives her share. It is already third in rank in the Union as a foreign State. The percentage in —

| | |
|----------------------------------------------------|-----------|
| | Per cent. |
| Rhode Island, born of foreign parents is..... | 64.2 |
| Massachusetts, born of foreign parents is..... | 62.3 |
| Connecticut, born of foreign parents is..... | 57 |
| | Per cent. |
| The density of the population of Rhode Island is, | 407. |
| The density of the population of Massachusetts is, | 348.9 |
| The density of the population of New Jersey is, | 250.3 |
| The density of the population of Connecticut is, | 187 |

The subject of immigration is a matter not for the State, but for the nation. We can influence it only through our Senators and Representatives, but it is evident that something ought to be done. Never before have the records of immigration attained proportions equal to those of this year. It is estimated that over a million aliens have come in since the close of the Government's fiscal year in June last. On one day in April, five thousand immigrants passed through Ellis Island, while twenty thousand more were on ships in the bay awaiting examination, and eight more vessels, crowded with them, were expected to arrive on the following day. It is believed that Russia is now furnishing the largest number, with Italy following second.

But not to load upon the immigrant all the blame for the increase in insanity, let us look at the faults within ourselves. With us it is the pace which kills, anxiety, dissipation, the tension of our lives, our intemperance in work, that intense unremitting application which comes from competition and which leads to mental and physical strain.

Intemperance in drink occupies the first place among the causes. "If the individual who abuses alcohol was the only sufferer, the crime of its misuse would not be so great. But even unto the third and fourth generation the effects of the poison may be traced in constitutional neuroses, psychoses, early mental break-downs, and eventually imbecility and idiocy. Unless the use of spirituous

liquors be restricted in some way, we may in the future expect to see a still more alarming augmentation of the lunacy evil." * These facts ought certainly to be in possession of the public just as much as those regarding tuberculosis.

Contrast our condition in this respect with that of the savage. His home is his lodge, his tent; his drink the mountain brook; his food, that freshly captured in the chase; his bank deposit, his belt of wampum; his recreation, the out-of-door dance or game, the horse, the canoe; his anxiety short-lived; his life is for the day; his nights are spent in restful sleep.

But we are not willing to let up. We have forgotten even the name of the author of the *Simple Life*. We rush to the crowded city to live; we like its excitement, its gayety, its dissipation, its amusement day and night, its rush, its rivalries, its risks.

What are we going to do about it? Tell the people that alcohol and syphilis and excesses of life in all forms tend to insanity; teach the people that insanity is a disease curable many times if taken early, that an insane asylum is not a place to be shunned, that it is not a house of detention, but a hospital, a place for cure. Tell them that they ought to take care of their aged parents themselves at home, not leave them to die as dotards in an insane asylum.

Tell the lawyer that the idiot, the non-compos, the deficient in intellect should not be classed in the statute with the insane, the perverted in intellect; the incurable with the curable, as he is now. Tell our legislators that instead of waiting until well-developed cases flood our asylums and retreats, we should take measures to prevent it or at least to recognize it in its incipency and cure it, like tuberculosis, if we can, before it gets too firm a hold and dethrones reason.

Find out the cause of this effect,
Or, rather say the cause of this defect;
For this effect, defective, comes by cause.

* Henry J. Berkley, clinical professor of psychiatry, Johns Hopkins University.

To this end let our efforts be made, and whether we have a Commission in Lunacy appointed by the Governor, a permanent commission for the systematic study of insanity in all its forms, whether we have psychopathic wards in our general hospitals as was suggested by Dr. Diefendorf in his paper yesterday, whether we have a corps of Examiners in Lunacy — whatever course be adopted — let us inaugurate and carry it out. Not that insanity can be stamped out except in an ideal state, but it can be largely obviated in a working practical commonwealth like ours.

The field is too large to follow further. I cannot touch upon the pure food bill or the proprietary medicine crusade so prominent before the public, or the question of rest for the shop girl who is compelled to work more than ten hours a day, six days in the week. It is the general principle of the education of the people for which I am striving. The application in detail may be made wherever there is the greatest need. Public opinion is the fountain-head of government.

To quote the words of Dr. John A. Wyeth in his president's address before the American Medical Association at Saratoga Springs in 1902, "I ask this Association to stand for more than the healing art. To labor for the alleviation of suffering and for the restoration of health is a noble avocation, but to teach our fellows how to avoid disaster, is a prouder privilege and a higher duty. We should be teachers of men. How better can we protect the public from disease in all its various forms and insidious processes than by perfecting in every county and in every community an organization which shall be ever watchful and insistent upon obedience to the laws relating to public health." But we must be earnest, we must be enthusiastic, or we will accomplish little. We must wear our hearts upon our sleeves that it may be known what we think and that we may be ready to impart it to others.

Preventive medicine has taken its place among the sciences. It has its professors and its specialists. We no longer wait for disease; we enter its domain and drive it from its lair. This is the

duty of the physician; it is his function — aye, it is his privilege.
But we must enlist the help of the people.

What constitutes a State?

Not high-raised battlement or labor'd mound,
Thick wall or moated gate;
Not cities proud with spires and turrets crown'd;
Not bays and broad-arm'd ports,
Where, laughing at the storm, rich navies ride;
But men, high-minded men,
Men who their duties know,
But know their rights, and knowing, dare maintain;
These constitute a State.

PAPERS ON SPECIAL
SUBJECTS.

The Need of Psychopathic Wards in General Hospitals.

A. R. DIEFENDORF, M.D., Middletown.

I desire first to show how little is being done to actually check the alarming increase of insanity in the State of Connecticut; and second, to point out how the physicians of the State can take an active part in the campaign against this great scourge of civilization.

On all sides we learn of the astounding increase of insanity. Your president will call your attention to figures, which show that from 1890 to 1906, the increase of accumulated insane in Connecticut has risen from 1 in 555, to 1 in 323 of our population; i. e., in the year 1906, there is 1 insane to every 323 of our population.

What has and is being done to meet this alarming condition? The State of Connecticut has expended \$1,252,573.00 to build, equip, and enlarge from time to time one of the largest insane hospitals in the United States, and at the last two sessions of the legislature, there was voted \$600,000 to build and equip another large State institution. This money, carefully expended, has created a fine and complete equipment, which is almost the equal of the best of State institutions, and fully the equal of many private institutions. But what is being accomplished with this equipment? From 500 to 600 patients are being yearly committed by the various courts to these two institutions. Of these from 15 to 20% are being discharged recovered, and as recovered or benefited, 25 to 32%. In explanation of these unsatisfactory results an argument can be offered, which I regard of the greatest importance. It is an accepted fact among psychiatrists, that only a small percentage of cases recover after the disease has been in existence over twelve months. Bearing this in mind, observe that during the year 1902-1903, 67% of all the patients admitted to the Connecticut Hospital for the Insane had been suffering from

their disease over twelve months. In the year 1903-1904, 61% had been insane over twelve months before admission. From the establishment of the hospital in 1867 to 1904, 57% of the patients had been subjects of disease twelve months and over before they were committed to the State institution for treatment. In order to show that the same condition exists elsewhere than in Connecticut, I quote from the last report of the Manhattan Hospital, West, where 42% of the admissions had been insane over one year before admission; again, in the report of the Pennsylvania Hospital at Dixmont, we find that 56% had been insane over one year. State hospital reports gathered from all parts of the country will show an identical state of affairs. In none of the State hospital reports is any account taken of the number of cases which are readmissions of patients formerly discharged not recovered. Eliminating this factor in our own cases, I find that there still remains the very large percentage of 41% of the admissions in 1904 in which the disease had been in existence over twelve months before commitment.

While I do not wish to burden you with statistics, for the benefit of those who might ask if some of these patients had not been cared for elsewhere than at home, I can say that during the year 1904-1905, only 2% of the patients had received treatment in other insane or general hospitals or sanatoria.

The diseases presenting the largest number of cases of a duration of more than twelve months are epileptic insanity, 80%; senile dementia, 67%; organic dementia, 63%; paranoia, 50%; dementia paralytica, 48%; dementia præcox, 35%; melancholia, 21%; alcoholic delusional insanity, 16%; and manic-depressive insanity only 7%.

In view of the fact that only a small percentage of cases recover after a duration of twelve months and that 41% of our cases have been insane at least that long, it is easy to explain why our percentage of recoveries cannot get above 15 or 20%. Viewed in this light, it at once becomes apparent that our State insane hospitals, the institutions designed to treat the middle and lower classes of society, are little more than asylums for the care of those who are irrecoverably insane. Therefore, I contend that

our equipment, however complete it may be, does not and cannot improve our percentage of recoveries and cannot cope with the increase of the insane until we are enabled to treat a larger number of the early and recoverable cases. Twenty millions cannot, applied in this way, stop the ever increasing percentage of the accumulated insane.

There are two prominent obstacles to the attainment of the object for which our hospitals are established; one is a prejudice abroad in the public mind, and the other is the prohibitive nature of our State laws as regards the commitment of the insane.

In the minds of very many persons, including even many professional men, indeed even medical men, our institutions are places to be avoided except as a last resort. It is safe to say that most of these skeptical persons are wholly ignorant of the character of an up-to-date insane hospital. Their minds are still filled with prejudices arising from horrible tales of long ago about the dark cells, the numerous implements of restraint, and the outrageous abuse by nurses. They have never seen the interior of a modern insane hospital and have no conception of the great change that has been wrought in hospital treatment by the use of the prolonged warm bath, the bed treatment, the training school for nurses, and the absence of mechanical restraint. Besides this there is the stigma that attaches to a family if one of its members has to be sent to an institution, which deters a parent or relative from taking such a step, even though they know that the treatment afforded there would be beneficial.

For those enlightened individuals who are wholly free from prejudice, the present method of probate commitment, based upon the absurd principle that only persons legally adjudged insane can be confined in a public insane hospital, is a stumbling block. It prevents a patient being committed until he has become dangerous or his conduct has become intolerable at home. The practical working of the law is prohibitive to the treatment of that very large number of cases that develop gradually and insidiously. These cases do not show dangerous tendencies or exhibit intolerable conduct until after the disease has been in existence many months.

Thus the institutions are deprived of an opportunity to do their

most effective work and are reduced in the greater number of cases to mere houses of detention for those who are dangerously insane or whose presence at home has become a burden. Voluntary commitment to the public institutions would remove this barrier, and permit an adequate treatment of all such cases.

In combating mental disease and its increase throughout the civilized world, the rational method of procedure is along two lines. One is the scientific investigation of the nature of the disease with a view to determining its etiological factors, which may then be eradicated. This work is being prosecuted with great energy everywhere among civilized people. The other is the application of adequate early treatment. It is upon this method that I wish to lay most stress and in which I desire to elicit your interest.

The remedy which I have to offer is the establishment of psychopathic wards in general hospitals. It has already succeeded abroad. Note the results. In the reception ward for the so-called nervous cases in Glasgow, between the years 1899 and 1904, 1345 cases were treated; of these, 86 cases died, only 183 were sent to asylums, while 1,052 were discharged recovered or relieved, namely, 71%, either recovered or benefited. Encouraged by this remarkable success, the Council erected a pavilion especially adapted for the treatment of such cases. During the first six months, the latest report that I have, 260 cases were admitted, 13 died, 62 were sent to asylums, and 155 or 60% were discharged recovered or benefited.

The average duration of treatment was much under six weeks.

In 1902, a psychopathic ward was established under the influence of Dr. Montgomery Mosher, in connection with the Albany General Hospital, and to my knowledge this is the only institution of this kind in this country, with the exception of the clinic just established at Ann Arbor. From the time of its establishment to February, 1905, 570 cases had been treated, while 58% had been discharged recovered or improved. These results certainly compare favorably with those abroad.

These are the direct results. From a statistical standpoint, no further recommendation would seem necessary, but there are

certain secondary objects to be attained, which are of no small moment.

In the first place, the education of the people so that they may recognize mental diseases in their true light. It is essentially important that the old prejudice against insanity should be removed, and that every one should realize that no more stigma attaches to a family if a parent should become insane than if a sister had an attack of typhoid fever. A psychopathic ward in each large general hospital in Connecticut, in which mental cases could be received and treated on the same basis as medical and surgical cases, would, I am confident, accomplish much in this direction.

Again, nurses and physicians are woefully in need of training in the care of the insane. It is not an uncommon experience to have nurses refuse absolutely to go out on mental cases. Physicians also hesitate to assume the responsibility. One reason for this is that both realize their insufficient training. Psychopathic wards would ultimately stimulate greater interest in these diseases, and would create a corps of registered nurses well trained for such work. Practitioners also would have a better opportunity to study insanity.

Finally, in University cities, there would be afforded much needed clinical facilities for teaching mental diseases. Such clinics have for years been the chief factor in creating that vigorous impulse to the study of mental diseases, which has placed Germany foremost in psychiatric research. They serve as the nurseries for the proper education of the medical profession in psychiatry.

SUMMARY.

Insanity is undoubtedly increasing in Connecticut.

The community is caring well for its chronic insane, but nothing to stem the tide of the increase.

A tried and effectual method of coping with this condition is the establishment of psychopathic wards in general hospitals.

DISCUSSION.

William M. Kenna, M.D. (New Haven): Mr. President and members of the State Medical Society: There is really nothing material to add to Dr. Diefendorf's most excellent and graphic paper. He

has struck the nail on the head, and all we can do is to emphasize the points which he has already brought out. It seems to me most striking that there is such general apathy in this matter of insanity, both among the laity and among medical men. We tried here in New Haven, I may state, to get the general hospital to consider a ward of this kind, but for various reasons the attempt was unsuccessful. One was lack of money, and another was the fact that the charter expressly forbids the admission of insane patients. If a person becomes insane here in New Haven today, there is absolutely no place to put him except in jail. The hospitals will not receive him; he cannot even be sent to the poorhouse without a lot of red tape, and he must, if he be violent, be put in jail. In fact, I have had personal experience with cases of acute insanity, who had been kept in the lockup here for 24 or 48 hours. If a person has appendicitis, for instance, surgeons may criticise us severely if we wait an hour; but in cases of acute insanity we must hesitate and wait, and go through legal procedure before we can do anything for the poor sufferer.

I certainly second Dr. Diefendorf's suggestion that we appoint a committee to look into this matter, and I hope the day will soon come when every hospital in this state will have its psychopathic ward.

Dr. Frederick T. Simpson (Hartford): I, too, am heartily in sympathy with the position stated by Dr. Diefendorf, and I think that this is a matter of the very greatest importance that at the present time could occupy our minds.

In the first place, we have got to remove this stigma, if we can, that exists in society among the educated and uneducated people, and amongst members of the profession, almost, about insanity. This dates back, of course, into the dark ages, when they treated the insane as criminals and put them in cells, confined with chains. It was only in the last part of the eighteenth century, I believe, that the doctors undertook in any way to treat the insane, and it was only in the last part of this 19th century that it was recognized that the causes of insanity were internal and bodily, not external; that in three-quarters of the cases it was a condition due to infection, toxemia, improper metabolism, to changes, senile or retrograde, to diseases of other organs, such as the brain, the heart, the kidneys, or the ovaries. Now this establishes the unity of diseases, the unity of mental and physical disease, and any taint or stigma from the fact of insanity is at once removed. There is no more stigma in a woman's having puerperal insanity or melancholia than there is Bright's disease, or any other disease, and we want to emphasize this fact.

The psychopathic ward will do more for this purpose than any other thing we can ask for. If a psychopathic ward is established in connection with the general hospital, it at once brings this class of diseases on the same footing as all other diseases that are there treated. You have at once members of the staff coördinating and coöperating with all the other members of the staff. If insanity is due to a condition of bodily disease,

then you have at hand men of skill and experience that may be called in to treat those conditions to which insanity may be due.

Secondly, you have at hand a large amount of opportunity for examination and for treatment that you can't get in any other way, and therefore we can look for recovery and for study in those cases. The chief point is, (as the Doctor has said) if possible, to cure the insane. As the Doctor has said, there is an astonishing increase of insanity; and it is not alone that, but there is an astonishing increase of what you might call mental invalidism, cases of neurasthenia, hysteria, hypochondria, and cases of morbid fears, excessive nervousness, and allied conditions. A large class at the present time are in those states which are on the border line between the sane and the insane, between sanity and insanity. You can't tell always what is going to happen in a case of neurasthenia, whether it is going to remain simply as a case of neurasthenia, or whether it is the initial stage of a dementia-precox, or some other disease. The advantage of a psychopathic ward is that you have the cases which are more suspicious under observation and treatment, and thereby removed from any danger.

Still another reason is seen in the medico-legal cases. Now our present method of dealing with these is altogether antiquated. The physician goes to the prisoner at the jail, spends an hour perhaps with the individual there, and makes up his mind one way or the other. It is absolutely impossible in many cases to form a conclusion in that length of time. As Stewart Paton has pointed out, these detention wards, these psychopathic wards would be the places where such an individual could be kept under observation, even if it takes days and weeks of watching (day and night) before you can actually determine whether the patient is sane or insane. This is of direct interest to the State, and I believe, of great value.

Then, as the Doctor has pointed out, for the training of the profession at large by the training of medical students or physicians, it is of very great value. Doctors will become more valuable members of the community, because all these cases come under his charge, and they can become much more competent advisers, for they have this training which can be given to them from the psychopathic wards.

In this matter we are behind all other countries. Take Germany for instance. In every large city in Germany of over 50,000 inhabitants, they have one of these psychiatric clinics (which is really a psychopathic ward, or a hospital ward), which is built by the city itself, where all these cases must go; where they are examined, treated, cured if possible, or else sent on to the great country institutions as chronic cases, where they are put on farms, if they can be made use of, or kept in rooms if they cannot.

Munich, for instance, within a year or two, has spent \$500,000.00 in the establishment of one of these general detention rooms or reception hospitals. Of course that is one of the difficulties that we labor under in our democracy.

Our hospitals are dependent wholly upon the generosity of private individuals, and it is very difficult for us to get money for the routine expenses. It means a campaign of education in order to establish any such thing as this, and that is what we have got to do.

Bacterial Immunity.

CHARLES J. BARTLETT, M.D., New Haven.

In response to the Committee's request for a paper upon some subject related to pathology, I shall attempt to give a brief summary of certain facts and generally accepted theories regarding immunity against bacterial infections. Much of the recent experimental work in pathology has been devoted to the study of the so-called "antibodies." These include both those formed against bacteria and their toxins, and those resulting from the introduction into the animal body of numerous other complex substances, and they are referred to as antibodies because they neutralize or destroy or in some way antagonize the substances through whose introduction they are produced. It is because our hopes for further advancement in specific serum therapy must be based upon studies of this nature that this subject has been chosen.

In order to appreciate the problems connected with the production of antibodies against bacteria, it is essential to recall the methods by which bacteria produce disease. The old theory, that this action is mechanical, has been abandoned. It now seems probable that all bacteria, which produce disease, do this by means of the toxic substances formed in their growth, and that no pathogenic bacterium is entirely wanting in this property. This toxic theory is generally accepted. These toxic substances, which are the real disease producers, do not affect all tissues alike but show a selective action. A clinical example of this is seen in the tetanus toxin, which acts upon the nervous system. Other toxins, like that of the typhoid bacillus, act chiefly upon the lymphatic structures, while still others destroy red blood corpuscles. The character of the tissue acted upon by toxins is not of small importance. It may indeed be one of the chief factors in both natural and acquired immunity. Further, bacteria differ greatly in the solubility of the poisonous substances which are produced by different varieties of

the germs, and pathogenic bacteria may be divided into two groups, based upon this characteristic. The first of these forms soluble poisons. This is readily shown by cultivating these bacteria in a suitable liquid medium and then filtering this through a porcelain filter. The filtrate, freed in this way from all bacterial cells, contains the toxic products. The presence of these can be demonstrated, not by chemical tests, but by animal experimentation. These soluble poisons, resulting from bacterial growth, are known as extracellular toxins. When introduced into a susceptible animal, certain of them give rise to symptoms and lesions similar to those caused by the bacteria themselves. Only a few of the pathogenic bacteria, whose action is known, produce these extracellular toxins in large amounts. The tetanus bacillus and the diphtheria bacillus are the most conspicuous members of this group. The bacillus of bubonic plague, the cholera vibrio, the typhoid bacillus, the streptococcus and others may produce very small amounts of soluble toxins, far less than the two mentioned. They belong rather to the second group.

This second group comprises these bacteria whose chief toxic action is due to an insoluble substance. If a member of this group be grown for a short time in a liquid medium and filtered as above, the germ-free filtrate can be shown to contain little or no toxin. If, however, the bodies of these bacteria, after being killed by chloroform vapor, be injected into a susceptible animal, they can in many cases be shown to be very toxic. This toxin, whatever its nature, is evidently closely associated with the bacterial protoplasm and is not set free as a secretion by the bacterial cells. These are the so-called intracellular toxins, or endotoxins, and they are only set free by the destruction of the bacteria producing them. To this second group belong the great majority of all the pathogenic bacteria whose method of action is known, that is, they produce disease chiefly or entirely by means of intracellular toxins. In order to produce disease, they must be present in the body in considerable numbers and be destroyed. The cholera spirillum, the typhoid bacillus and pneumococcus are types of this group. The recognition of these two classes of toxins is very essential in the consideration of immunity. As will be later seen, the introduction of soluble toxins into experiment animals in proper do-

sage and at suitable intervals gives rise to the productions of an antitoxin which neutralizes the action of the toxin, but in the case of the endotoxins, no such antitoxin results from their injection. An antibody is here formed to be sure, but its action is to destroy the bacteria which produce the endotoxin instead of neutralizing the toxin itself. It is an antibacterial or a bactericidal or bacteriolytic substance, not an antitoxin. The difference is a very important one from the standpoint of serum therapy.

Turning from this preliminary statement of the action of bacteria to the main purpose of the paper, the mechanism by which the animal body protects itself from bacteria and their toxins, there is found a puzzling array of experimental results. In order to get at the gist of the subject, we may disregard the protection afforded by the skin and mucous membranes, by the gastric and other digestive juices, and consider the factors at play after the bacteria or their free toxins have actually entered the body. The study of natural immunity has aided materially in throwing light upon the problem. While natural immunity is at times a matter of individual peculiarity, in its higher types it is a property of certain species of animals by which they are permanently resistant to infections to which other animals are susceptible. It is therefore evident that such natural immunity is an inherited characteristic. But even these pronounced forms of immunity frequently have their limit of resistance. If the toxic substance is introduced in very large dosage or through unusual channels, this resistance may be overcome. Thus the chicken is entirely resistant to tetanus when the toxin is introduced in the usual way, but when this is injected directly into the brain it succumbs to the disease. If, in contrast to these examples of extreme resistance to bacterial products, animals be studied whose susceptibility to specific bacterial infections is great, there is found a limit to susceptibility below which it is impossible to go. Even here in the susceptible animal, there is a certain degree of resistance though slight. Natural immunity is then in the great majority of cases a relative term, and the degree of this immunity may be modified by a variety of conditions, such as cooling the body, or in cold-blooded animals, by raising the body temperature. The cause of this natural immunity does not depend always upon any one definite factor. If living

bacteria be placed in freshly drawn normal blood, it can be demonstrated that many of them are quickly destroyed. This may be so marked that millions are killed by a small amount of blood. The same may be shown in the animal body by inoculating the blood in a loop of a vein between two ligatures. Two interesting things are to be noticed here. First, a partial preliminary destruction of bacteria occurs even though the remainder later multiply rapidly in the same blood; and, secondly, this bactericidal action is selective, not directed equally against all bacteria. If a mixture of bacteria be taken, the blood of an animal may show much more destructive action towards one of these varieties than towards the others. Metchnikoff ascribes this power to destroy bacteria entirely to the direct or indirect action of phagocytic cells. Undoubtedly they are important agents, but recent work has shown that this action depends largely upon something in the serum which prepares the bacteria for phagocytosis. To this, reference will be made later. Further, Nuttall and other observers have shown that the normal blood serum, free from all cells, has bactericidal properties, at times as great or greater than the entire blood. Thus one of the factors in natural immunity must be accepted as a bactericidal substance in the blood. In some cases the serum of naturally immune animals contains substances which will neutralize outside of the body the toxins against which they are immune. This property may be demonstrated by mixing such serum with a fatal dose of the toxins and injecting the mixture into a susceptible animal, when the presence of the antitoxin becomes evident by the prevention of the fatal outcome. At other times neither antibacterial nor antitoxic substances can be demonstrated in the serum of naturally immune animals. As an example of this, reference may again be made to the chicken and its immunity to tetanus toxin. Though this animal possesses a high degree of immunity to tetanus toxin, its blood does not contain appreciable amounts of tetanus antitoxin. To explain immunity here, we may refer to the way in which toxin acts in the body to produce disease according to Ehrlich's theory, which has found general acceptance. He maintains that there must be a definite chemical union between the toxin and certain cells of the body for which it has an affinity. This union

of toxin and cells can only occur by means of chemical groups in the cells known as receptors, with which the toxin can combine. If none of the cells of the body have these particular atomic groups, or receptors, to anchor the toxins, the animal is immune because of this very lack of receptors. One other factor of which there is experimental evidence must be noticed, and that is the probability that cells containing these atomic groups or receptors, with which the toxin may combine, are present in very large numbers in comparatively unimportant tissues of the body, and that the fixing of the toxin by such cells, practically renders it inert. Metchnikoff has shown that the scorpion, which is absolutely immune to tetanus, stores up the tetanus toxin in the liver and retains it there for a long time. There is thus a considerable variety of recognized factors which come into play in natural immunity.

Turning from the consideration of natural immunity to that of acquired immunity, what factors give to the animal an increased resistance to the action of infectious organisms? and why may such an immunity be established against one disease, while in another it is almost entirely lacking? That there is such an immunity, frequently life long, after many of the acute infections, is a matter of general experience, but it is seen most typically and in highest degree in experiment animals. In them by repeated injections of suitable amounts of a soluble toxin, at proper intervals, a most enormous degree of toxin immunity may be established, or by repeated injection of bacterial cells, at first of slight virulence and later of exalted virulence, a similar immunity may be acquired against many varieties of bacteria. Immunity thus produced is referred to as active immunity. It is in a high degree specific, i. e., it protects only against the toxin or variety of bacteria used in producing the immunity. It is generally true that the same bacterium does not give rise to antibodies which are both highly antitoxic and antibacterial. A very few cause either the formation of an antitoxic serum or a bactericidal serum, depending upon the manipulation. The action of the antiserum is either to neutralize the toxin, or to destroy the bacteria, not both to any marked degree.

As but few pathogenic bacteria produce soluble toxins in large amounts, it is only against these few that an effective antitoxin can be obtained. Chief of these are the antitoxins for diphtheria and for tetanus. The technique in their production may be omitted. The theory is of some importance here. It has been already noted that Ehrlich claims that a chemical union between toxin and body cell occurs in the production of a bacterial disease. His conception of the very complex cell molecule may be best understood by recalling the graphic formula of some molecule in organic chemistry, with its central group and the bonds extending from this. These bonds or side chains represent atomic groups or receptors to which other atom groups become attached and are thus made an integral part of the cell. It is by these receptors that the cell obtains its nutrition, and also to certain cell receptors the toxins become attached. Each toxin molecule or each molecule of bacterial protoplasm can unite with only one particular kind of receptor, and if this type of receptor is lacking, the cell is immune. The toxin molecule contains at least two parts, by one of which (the haptophorous group) it unites with the cell. The other part is the actually toxic portion of the molecule (toxophorous group.) That these two groups are different, can be demonstrated experimentally. Because of this firm union between the receptor and the toxin molecule, the former is lost for the purposes of the cell. Unless the toxin is present in such quantity as to overcome the reaction of the cell, the working of a general biological law is here seen. As in the case of a callus formed around the broken ends of a bone where new bone is formed in excess of that which was lost, so here the living cell responds by forming more receptors of the particular type destroyed than were normally present. With each injection of toxin, the process is repeated. These receptors, each of which is capable of uniting with a molecule of the toxin, are far in excess of the requirements of the cell and hence they are thrown off by the cell and appear in the blood stream. They still retain this power of uniting with the toxin by which they were produced. They constitute the antitoxin. Antitoxin against soluble bacterial toxins consists then of free receptors of this type, which, according to Ehrlich, is the simplest form of cell receptor. When antitoxin

is transferred from one animal to another, and the latter is thereby rendered immune, the process is entirely a passive one on the part of the second animal. Nothing has to be provided by it. It is immune simply because the free receptors from the first animal have been introduced into its body and can there unite with the toxin molecules. This passive immunity is transient, however, lasting only a few weeks, as the antitoxin rapidly disappears. The active immunity produced in the animal by the introduction of the toxins, is of greater duration and may last a long time. The antitoxin here formed is specific, i. e., it neutralizes only the toxin used in producing it. Diphtheria antitoxin will not avail against the diplococcus of meningitis or against other bacteria. In therapeutic use, this antitoxin is only a preventative. Though employed after the disease is under headway, its action is only to prevent further poisonous action. After the cells have been once injured, it does not restore them to normal. When an animal is powerfully poisoned with the toxin, the antitoxin is unavailing in any amount. Recent work on tetanus has shown the necessity in the use of antitoxin of knowing the route by which the toxin reaches the affected tissues in order to so introduce the antitoxin that it may reach the toxin in greatest amount. It is also to be recalled that neutralization of the toxin by antitoxin does not mean the destruction of the bacteria producing the toxin. It is well known that the diphtheria bacillus may persist in the throat for weeks after diphtheria antitoxin has been used and the patient is well. An attempt has been made with some degree of success to produce an antibacterial serum by rendering animals immune to the diphtheria bacilli freed from their toxins, and to use this in conjunction with the antitoxin to destroy the bacilli. A few other soluble poisons besides bacterial toxins, give rise to the specific antibodies in a similar manner. Some of these are produced by the higher plants. Among animals, snake venom and the poison of spiders are similar to the extracellular toxins in this respect.

It is held that no antitoxin can be produced except against those substances which enter into chemical union with the cell, and the general statement is made that no antitoxin for any chemical of known composition has been obtained, although Metchnikoff

believes that an antitoxin is formed in arsenic habituation. To those historically inclined, it may be of interest to recall that Mithridates not only habituated himself to different poisons, but is said to have fed ducks with poison in order to use their blood as an antidote.

It has been stated above that certain bacteria, of which the typhoid bacillus and cholera spirillum are examples, form no soluble toxins but contain endotoxins, and that these bacteria when injected under suitable conditions, give rise in the animal body to antibacterial or bacteriolytic substances, which are specific, acting only against the bacteria producing them. These are known as bacterolysins. But no antitoxin for the endotoxin is formed. These antibacterial substances appear much more complex in their action than do the antitoxins discussed above. A brief reference to the experiments of Pfeiffer, Bordet, and others may help in making this action clear. These have shown that if a guineapig be rendered immune to cholera and then living cholera spirilla be injected into its peritoneal cavity, they are quickly destroyed; that this same thing occurs when the strictly fresh serum of this immune animal is mixed with the vibrios in the test tube; that the serum quickly loses this property of destroying the germs outside of the body, or loses it at once by a gentle heat; that serum that has lost this property again becomes active when injected into the peritoneal cavity of another non-immune guineapig, or if it has added to it, outside the body, some fresh serum from a guinea pig or goat. These and subsequent experiments have established the fact that this bacteriolytic action depends upon two distinct substances; that both of these are present in the serum of an animal rendered actively immune to the bacterium; that one of these, now generally called complement, is also present in normal serum and undergoes little change in character or amount during immunization, and that this is easily destroyed outside the animal body; that the second of these two substances is nearly lacking in normal serum; that during immunization it appears in great quantity in the serum and is to be looked upon as the specific result of immunization. It is called the immune body or amboceptor and is much more resistant to injurious agencies than is the complement. In the destruction of

bacteria, the immune body first unites chemically with the protoplasm of the bacterium against which it is immune, and then with the complement. In this action it is not the immune body which actually destroys the bacteria, but rather the complement, normally present, which causes this. This can act, however, only when anchored to the bacterium by the immune body or amboceptor. The source of the immune body, according to Ehrlich, is the animal cell. It represents a complicated receptor which becomes free in the blood in the same manner that the antitoxin receptors do.

When the possible prophylactic or therapeutic applications of this type of immunity are considered, the subject is at once seen to be complicated. By the injection of so-called "vaccines," that is dead bacteria, or living bacteria of low virulence, some degree of active acquired immunity against the bacteria may be produced. This has already been done in cases where the danger of infection is great. Wright's method of inoculation against typhoid fever is an example of this. A difficulty here is that this does not fully protect against intestinal infection. Where there is very great danger of infection, a temporary passive immunity may be obtained by the use of the immune serum. Against the therapeutic use of such an antibacterial serum, the difficulties are many. Very important is the fact, already mentioned, that no antiendotoxin is formed. In this class of infections, the bacteria are present in the body in great numbers and the action of the antiserum at best could be only the destruction of the bacteria. This would result in the sudden setting free of the endotoxins. The danger from this may be a theoretical one, but in animals it is possible after the bacterial inoculation to destroy all of the bacteria, but still have the animal die of the toxins which are liberated. Also in diseased conditions, the complement is reduced in amount and so may not be present to unite with the immune body. The introduction of complement from another animal, involves the question of the production of anticomplement, but the discussion of this, as well as that of the antiamboceptors and the diversion of complement must be omitted. To quote from Park: "Through bactericidal serums, therefore, we can immunize against an infection, and even stop one just commencing; but as yet we cannot cure an infection

which is already fully developed, though even here there is reason to believe that we may possibly prevent an invasion of the general system from a diseased organ, as by the pneumococcus from an infected lung in pneumonia."

In attempting to explain the different phenomena of immunity thus far Ehrlich's theory has been followed. His theory and his own researches have very markedly stimulated research work on the subject of antibodies. But no paper on immunity, however brief, can omit a reference to Metchnikoff's theory. This is the well known theory of phagocytosis. It has undergone such changes to account for the more recent advances in the study of immunity, that it may hardly be recognized in its modern dress by those who were familiar with it ten or more years ago. Its fundamental principle, as then, is that immunity of all forms depends upon the action of phagocytic cells. These cells are not all of like importance in immunity. One class of phagocytes, the polymorphonuclear cells of the blood, are particularly active in the destruction of bacteria in acute infectious diseases. These being the smaller cells are known as microphages. They produce the destruction of bacteria by means of a ferment which they form known as microcytase. This ferment, as long as the leucocyte remains intact, is not set free from the cell. It is an intracellular ferment and so is not found free in the plasma of the circulating blood. It is only when there is a partial or complete destruction of the cell that this cytase is freed from the cell and may then be found in the blood serum. This microcytase may then act to destroy the bacteria without the cell. Metchnikoff further recognizes in acquired antibacterial immunity the production by the leucocytes, in certain diseases, of other bodies which are set free from the cell and so appear in the plasma. These in some manner unite with the bacterial cell and render it more easy of ingestion by the leucocyte. To them he gives the name fixator. Each fixator is specific, that is, it unites only with that bacterium against which the immunity has been established. These same microphages also protect against soluble toxins by absorbing them and probably by changing these in some manner to antitoxin. According to the theory, natural immunity against bacteria depends

entirely upon phagocytosis with intracellular digestion. Natural immunity against soluble bacterial toxins depends upon the ability of the leucocytes to absorb the toxin. Acquired immunity against bacteria is due to increased phagocytic action of the microphages, with, in some diseases, the specific fixators formed by the leucocytes. The leucocytes also produce active immunity against soluble bacterial toxins. In passive immunity, both antitoxic and antibacterial, the immune serum acts to stimulate the leucocytes, in the one case to the absorption of toxin, in the other to increased phagocytosis. The second class of phagocytes, in Metchnikoff's theory, consist of the large lymphocytes, the endothelial and connective cells, and are known as macrophages. Aside from noting that they produce a ferment, macrocytase, and that their action against animal cells is quite comparable to that of the microphages against bacterial cells, we may omit further discussion of them. In bacterial immunity, they seem to be important only in certain chronic diseases.

This theory of Metchnikoff's is of particular interest at this time because of the very recent work which has been done, which both materially modifies it and at the same time emphasizes anew the importance of phagocytosis. I refer to the work of Wright and Douglas upon opsonins, reported in 1903 and 1904, and confirmed by others. They found that many varieties of bacteria were not taken up directly by phagocytes without some preliminary change produced in them by the blood serum. When the leucocytes were washed entirely free from serum and were then mixed with suspensions of bacteria in a fluid free from serum, no phagocytosis occurred, but this did result when serum was again added. To these substances in the serum, which in some way prepared the bacteria for phagocytosis, they gave the name "opsonin," that is "feast preparer," and to the serum containing it, opsonic serum. If bacteria are first treated with serum, are then entirely freed from it and are mixed with polymorphonuclear leucocytes, which have also been washed entirely free from serum, they are then taken up by the leucocytes, showing that a union has occurred between the bacteria and the opsonin, that is they have been opsonized. Such bacteria are not necessarily injured by the opsonin in so far as growth,

etc., is concerned. Opsonins are present in normal blood serum and human serum contains opsonins for a large number of the pathogenic germs. Whether these are normally several specific opsonins or only one common one is unknown. Wright and Douglas found that patients with chronic staphylococcus infection of the skin had a decided increase in opsonic power. Also that human serum had its opsonic action towards the tubercle bacillus increased by the injection of minute doses of tuberculin. Thus immune opsonins are formed and these seem to be specific, acting upon the bacteria against which the animal has been immunized. The opsonic power of a patient's blood can be determined, and studies made by Wright and others show that, in persons with infectious diseases, there are periods when this is decreasing and periods when it is increasing. If the opsonic index be watched, it is found that when bacterial products be injected, in the form of tuberculin in tuberculosis for example, while the opsonin is decreasing, the patient's resistance is further depressed. If, on the contrary, the bacterial products be introduced when the opsonic index is high, be given in proper doses and at suitable intervals, the resistance is increased. By watching the opsonic index and making injections when this is high, Wright has used this method in increasing resistance, especially in chronic local infections, more particularly in tuberculous lesions. He reports some surprising results in subcutaneous, bone, and lymph node tuberculosis. That these specific immune opsonins are of importance in increasing resistance to certain infections, seems certain.

We are fortunate in having in a very recent number (May 12, 1906) of the Journal of the American Medical Association, the publication of the Middleton-Goldsmith lecture of the New York Pathological Society, delivered in February last, by Dr. Ludvig Hektoen, of Chicago, on this most recent and important development in immunity. I quote from him: "The prompt and pronounced phagocytosis observed by numerous investigators of different bacteria in the peritoneal cavity in the presence of specific immune serum, indicates that opsonins play an analogous role *in vivo* as *in vitro*, and we must conclude that in opsonins we have a new form of antibody that plays an essential part in the explanation of

immunity to and healing of those infections that are caused by bacteria, like streptococci, pneumococci, staphylococci, and others, the destruction of which is not at all or at least not readily accomplished by free lysins and in infections with which there is so pronounced a leucocytosis."

In this connection, one precaution is necessary. It has been attempted, following the leadership of Mikulicz, to produce leucocytosis before abdominal operations where there seemed to be great danger of infection. The procedure seems rational. But choice must be made of an agent to produce leucocytosis, which will not decrease the opsonic index, for it has been shown that numerous chemical agents neutralize or destroy opsonins.

I have intentionally omitted all mention of certain other well recognized antibodies formed in infections, namely agglutinins and precipitins. Also no mention has been made of that large class of cytolytic substances, which offer so much of interest of themselves and have helped in a large measure in understanding bacteriolysis, nor of the numerous researches in special immunity, like the immunizing of cattle against tuberculosis. This has been necessary in a brief paper.

From the theories of immunity, as above outlined, it is evident that neither the old humoral theory, that immunity depends entirely upon the fluids of the body, nor the strict cellular theory, that it is due directly to the action of cells, can be accepted today. Rather a cellulo-humoral theory, recognizing the importance played both by cells and plasma, seems best to express the conditions as now understood.

DISCUSSION.

Dr. Charles J. Foote (New Haven): Mr. President, when one is asked to discuss such a paper as this, it is a rather difficult matter, I think. In the first place, one has to pay very close attention to follow the line of thought, although the paper was written in such an interesting and clear style. To discuss the paper as it ought to be discussed, I think one ought to have the paper and sit down in the office for an hour and read it over carefully. I feel that a discussion of this paper, after just listening to it, would be entirely inadequate, and after all the discussion of such a paper should be by a laboratory man who has devoted his whole time to laboratory work. The general practitioner can say but little regarding it, he can only discuss it from an outside standpoint.

Expressing the views as they come to me from study and reading, it seems to me that the study of Immunity has contributed very largely to recent developments in physiological and pathological work. It is quite certain that the absorption and utilization of food has very largely to do with processes which are quite similar to those by which immunity is produced; that the receptors, which Ehrlich describes, not only act as bodies to protect the individual, but also for the absorption and utilization of certain food particles. As we discuss these cases, and as we read articles upon this question, we are impressed with the newness of the study, and with the fact that those who are studying it know but very little about the chemical constitution of the bodies they discuss, and that most of us know but little about the terms which they use. The terminology is almost equivalent to a complicated Algebraic formula, and we hardly understand the various opsonins and precipitins that are spoken of. They are something outside of the knowledge of most of us. The thing we are most interested in is seeing the results of these studies bearing practical fruits, such as the recent investigation of Beebe in New York, in the cure of exophthalmic goitre. Such studies as this, lead one to think that before long malignant tumors will have their serums, which will produce absorption. Among the queries that come to the general practitioner is this question which naturally arises: Is the immune body the healthy body? Is the person who is immune, after all, the healthy person, and may it not be that these powerful remedies, which are used in the treatment of disease, render a person susceptible to certain diseases that he otherwise would not be susceptible to? The only thing that the general practitioner can do for the present in the production of immunity is to depend on the methods which are long in use, namely: fresh air, sleep and food, the looking after the respiratory organs, seeing that no poisons accumulate in the system to render the cells susceptible to the invasion of bacteria, and using the old methods of the past until other methods have been developed for the cure of the disease.

Dr. Charles J. Bartlett (New Haven): I am glad that Dr. Foote, in discussing the question, spoke of the work of Beebe, because that part of the question I did not touch upon at all on account of the length of my paper. The work of Beebe, as perhaps you know, is an attempt to form an antibody which will destroy special tissue cells, and he and Rogers have reported their work on the treatment of exophthalmic goitre. He has had remarkable success in being able to produce an antibody which will apparently cure exophthalmic goitre. It seems to me that there is a great field open here in the possibility of treating tumors in this way. We may, perhaps, thus cause the destruction of the specific cells for cancer. It is well known that antibodies may be formed against many substances, and if we can get a specific antibody against these growths, the possibility of specific serum treatment is certainly great.

Aphonia.

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Aphonia is loss of voice, and whether it is partial or complete depends upon an extended list of causes. In an individual case, we may have the aphonia varying from slight huskiness to a complete loss of power of phonation. The aphonia may be transient, or may become permanent. Aphonia is, of course, only a symptom, but it is such a prominent one that we are justified in treating it as a disease for the purposes of discussion, and one which is worthy of our careful consideration. The study of it is full of interest and it is only by a careful analysis of its various phases that we can arrive at a satisfactory understanding of it in its protean forms.

In cases of functional complete aphonia, the most marked is, of course, the so-called hysterical aphonia.¹ This is a functional adductor paralysis, and is usually complete from the first. That this is functional, is shown by the mobility of the cords during coughing or laughing. This almost always occurs in women and during the menstrual life, and further, as a rule, occurs in those of the so-called neurotic type. It is still further usually found in women unmarried, or widows, or in those in whom the sexual instinct is ungratified. These cases are interesting from the suddenness of the invasion, the completeness of the aphonia and the sudden return of the power of speech.

In looking for causes of this condition, the patient usually tells us that it is the result of a cold, but examination of the larynx reveals nothing of an inflammatory nature, and during the whole course of the aphonia we see none of the signs of laryngitis.

Fright, anger, deep sorrow and even intense joy may be the exciting causes of this loss of the power of speech.² Some cases occur during a menstrual period, as would seem natural in the exalted emotional condition of many women at this time. This

phenomenon has been known to occur at the close of menstrual life. Functional aphonia may further occur on the subsidence of a laryngeal catarrh.³ In all of these cases the symptom is loss of voice, and nothing else.

As curious examples of this peculiar condition may be mentioned, a sudden mutism⁴ following the amputation of the second phalanx of the middle finger of the right hand, one case of aphonia following ligation of the common carotid, and still further cases following *suppressed menses*. The prognosis of these cases is, of course, exceedingly good, with or without treatment. But the duration of the condition may be shortened by one or more of many expedients, all of which appeal, more or less, to the psychic realm of the sufferer — electricity, galvanism or faradism, with a current sufficiently strong to impress the patient's mind with the expected efficacy of the treatment, will often be sufficient to bring about a cure.

Some of these emotional reflex aphonias must be treated with gentleness and some with affected severity, even to exciting the anger or disgust of the patient.⁵ Production of anæsthesia to a point of excitation will often cure the case. But whatever course or plan of treatment is carried out, we may be sure that sooner or later the complete restoration of the voice will occur.

In cases of complete aphonia due to mechanical etiology, we find a most diverse and varied list of causes. We may have as a most frequent cause, a laryngitis due to exposure to cold in which aphonia may be due to muscle infiltration, making it impossible for the cords to approximate, or the false cords may be swollen to such an extent as to interfere with the voice, or there may be a supra or infra-glottic œdema sufficient to produce the aphonia. Growths of various kinds may interfere with the power of voice production; e. g., growths on the cords themselves, papillomata, fibromata, œdematous fibromata or polyps. Foreign bodies accidentally impacted on the intubation tube, will induce a temporary loss of voice.

A very interesting class of cases is that where the aphonia is due to one of the different paralyses.⁶ If the paralysis is of a recurrent laryngeal nerve, aphonia is at first present, then overcome

by a "large excursion of the normal cord to its diseased fellow." If both nerves are affected, the aphonia is, of course, complete and remains so as long as the paralysis continues. If the paralysis is bilateral, we can, in general, say that it is of central origin. If unilateral, it is due to pressure on the nerve at some part of its course,⁷ as from aneurism, enlarged glands, mediastinal tumors, cancer of the œsophagus, etc. A paralysis of the arytenoids gives rise to either complete aphonia or an impaired voice.

⁸Unilateral paralysis of the adductors is a rare condition due to chronic toxæmia, lead, arsenic, or diphtheritic poisoning. It may result from cerebral disease or may be caused by cold or muscular strain. It is met with after smallpox, in syphilis or phthisis (McKenzie). Unless the brain is affected, loss of voice or hoarseness is the only symptom except that coughing, sneezing, or laughing are also aphonic. The prognosis is favorable when the cause is local. A paralysis of the cricothyroid muscles usually results in dysphonia and sometimes aphonia, and may be the result of overstraining (A. H. Smith).

⁹Observations concerning the changes in the voice during a diphtheria are interesting and instructive. At first we have simply an impairment of the voice, the so-called catarrhal hoarseness, the voice assumes a metallic timbre and is raised in pitch. Then when there is membrane forming, or formed, on the cords or ventricular bands, or in the interarytenoid space, complete aphonia is apt to ensue. This may be explained as paralysis of the adductors in some cases functional, in other cases it may be due to diphtheritic neuritis or myopathic changes.

In laryngeal tuberculosis, in its incipency, there is a frequent occurrence of functional aphonia in which local anæmia seems to be the principal factor; while in the later stages the aphonia may be due to enfeeblement of breath motor power, and the separation of the arytenoids by tumefaction or interarytenoid thickening.

In complete aphonia there is found by every practitioner a large collection of cases due to syphilis or tuberculosis, and in both syphilitic and tuberculous aphonia, there is a large range in the degree of loss of voice, varying from slight roughness or hoarseness to a complete loss of power or production of the speaking voice in the later

stages, and where the sufferer can alone converse in whispers. Every case of laryngitis, whether simple or specific, produces some degree of aphonia. There is a most interesting aphonia due to laryngitis of mixed tubercular and syphilitic infection where the aphonia is progressive and the increasing loss of voice may be followed by the observer as he makes his daily or weekly examinations of the larynx and perceives that as the infiltration increases, the voice becomes more and more impaired.

There is a most curious aphonia, the so-called spastic aphonia, which is described by Knight as follows:¹⁰

"Spastic aphonia is a violent adductor spasm occurring only on attempt at phonation, ceasing when the effort to speak is discontinued. It is apt to follow overuse of the voice. In some cases the cartilaginous portion of the glottis remains open, while in others the adduction is so forcible that the cords overlap and stenosis is complete."

The foregoing is a very incomplete list of the examples of aphonia, but I have but little hesitancy in reading such a brief paper on this subject as the programme shows that you are to have men much more able to discuss the subject than the writer is to write concerning it, and will only end, as I began, by reiterating that although aphonia is only a symptom, it is a most important one and well worthy your attention.

BIBLIOGRAPHY.

1. Grayson: Diseases of Nose, Throat and Ear.
2. A. H. Smith: Phil. Med. Times, 1873.
3. Lennox-Browne: Diseases of Throat and Nose.
4. Arch. Med. Belges Brax., 1864, XXXIV, p. 256.
5. Kyle: Diseases of Nose and Throat.
6. Mayer: Wright's Diseases of Nose and Throat.
7. Bosworth: Diseases of Nose and Throat.
8. Lennox-Browne: Diseases of Throat and Nose.
9. Ibid: p. 527.
10. Knight: Diseases of Nose and Throat.

DISCUSSION.

Dr. Herbert E. Smyth (Bridgeport): Mr. President, and Gentlemen of the State Medical Society: I was very much interested in Dr. Munger's paper, and he has covered briefly the subject quite thoroughly.

There are one or two things which I would like to emphasize, however, on the question of aphonia.

In speaking to a body of general practitioners, it seems to me very important to emphasize the necessity of seeing the larynx. I think it is customary to make the diagnosis of aphonia or laryngitis without getting a view of the larynx at all, and in following that custom, one is liable to make mistakes. It is not at all uncommon to see a case of tumor of the vocal cords which has been diagnosed as a case of laryngitis, when the most fleeting view of the larynx would have corrected the diagnosis.

It is not at all uncommon to find the diagnosis of laryngitis made when there is a complete paralysis of one of the vocal cords. I saw a case very recently of that kind which had been under treatment quite a long time for laryngitis, where there was complete loss of motion of the left cord.

There is another class of cases where an erroneous diagnosis may be quite injurious to the patient, and very recently a case came under my care, of a singer, who had lost her voice. She could talk and laugh as well as ever, but when she tried to sing, had no voice, and had to give up her position. She had been under treatment and had been told that under no consideration should she use her voice; if she should attempt to sing, she would lose her voice permanently and never be able to sing again. When I first saw the case I made up my mind it was a loss of confidence and hysterical condition, although the patient had no other hysterical symptoms. But the cords came together well and there seemed to be no particular reason why she shouldn't sing, as the laughing and speaking voice was normal. I tried suggestion in the case, and expected the next time she came she would report that she was very much better, but I was disappointed. She came back just as bad as ever, and I had her under my care for several weeks without any improvement. Finally I used a means which I am not in the habit of using. I talked to her very forcibly, and told her there was no reason in the world why she shouldn't sing; she was just as well able to sing as ever she was, if she had confidence that she could. I talked to her sharply and told her to go home and make all the noise she possibly could. She assured me she had been told that if she sang, she would lose her voice permanently. I told her it was not so, and I wanted her to make that effort. She telephoned me that very afternoon that her voice had returned, and she was singing just as well as ever, and, strange to say, she gave me the credit for the cure, whereas, as I had been so frank with her, I did not expect to be able to retain the credit of good work.

It is sometimes very difficult, however, to diagnose a hysterical condition. There are indeed certain conditions where it is almost impossible to do so without the history of the case. There was a case which was reported by Hunt some years ago of laryngeal trouble, which I mentioned in a paper before this society two or three years ago, of a girl who became aphonic after a sudden shock. She hadn't even whispered for years, but was finally

able to speak in a whisper. The examination of the larynx showed not only complete paralysis of both cords, but an effort to use the false cords for speech, and with all the apparent conditions of actual paralysis of the true cords. Her voice returned just as suddenly as it left her, after another severe mental shock. Without the history of the case, I don't see how it could have been possible to diagnose it as a case of hysterical aphonia.

Dr. Munger speaks of ether as a cure. Ether can also be used as a matter of diagnosis. A patient who has had aphonia for some time may speak naturally under ether.

The doctor spoke of the treatment by suggestion, and particularly with the aid of apparatus. I think that is the whole treatment of hysterical aphonia. A patient can very frequently be induced to speak at once. I can think of a case who had not spoken aloud for six weeks, that spoke very nicely before leaving the office. If you can make a decided impression upon your patient, either by suggestion or by some apparatus, or, as the doctor suggested, by a strong current of electricity, very frequently the case will be cured.

In the cases of aphonia due to organic disease of the larynx, the laryngoscope is even of greater assistance, although there are a great many cases that are put down as hysterical aphonia, which are undoubtedly due to other causes. Rheumatism in the arytenoid joints, some invisible affection or tumor of the vocal cords, might cause the difficulty, and still be very difficult to distinguish by inspection of the larynx. As the doctor has said, the fact that the patient can speak, or even cough, or be surprised into a laugh, is a very important thing in the diagnosis.

Dr. Henry L. Swain (New Haven): Mr. President, the subject of aphonia has been pretty thoroughly gone over in the paper and in what has been said here in discussion. It is patent that hysterical aphonia is one of the forms of aphonia which often attracts the attention of the laryngologist, which you, as general practitioners, can all of you diagnose by some such simple expedient as suggested by Dr. Smyth, and the cure is one of the dramatic instances in the life of a laryngologist. We have hysterical cases come in, and by some of the various methods suggested, they go home sometimes cured in one visit, sometimes they will not yield in a year or a year and a half. I have known them to stay without being able to make any improvement whatever, unless you want to use some of the really charlatan methods, and then finally the case has simply cured itself by suddenly talking out loud. These are very interesting, they are neither serious nor dangerous, and should not seriously be considered today other than the way they have been.

To all of us, the more essential cases are where it is necessary to make a diagnosis of the character of the aphonia, and therefore of the nature of the disease which produces it, where aphonia is but a symptom of a constitutional disease, or where it is an evidence of trouble which is going to interfere with the respiratory function of the larynx, and possibly cause

death. And I think some emphasis should be put upon the fact that in all cases of tonsillitis and quinsy, there is a liability for aphonia to come on in the latter stages of the disease. In such a condition, which is one of relative hoarseness, you will bear in mind the condition known as œdema. That is a very serious matter indeed, and sometimes the only evidence of it is a slight attack of hoarseness that will gradually increase until there is nothing but a soft voice left. There is no resonance, there is no clear cut tone, and yet the patient is not absolutely with "whisper" voice. And when such a condition of relative aphonia begins to come on, it is well to remember that such a condition as œdema may be present.

The possibility of making a mistaken diagnosis is tremendous, it seems to me, in cases where there is laryngitis. I have had all sorts of "hysterical aphonia." In one case a tumor existed as large as your thumb. In another case there was not complete aphonia, but a peculiar hoarseness diagnosed as hysterical aphonia. It was in reality due to a paralysis of the muscle which pulls the vocal cords apart, and a spasm of the abductor muscles existed, just as seen in whooping cough. The patient was suffering from a form of laryngeal paralysis.

It is apparent to you all, as Dr. Smyth said, that it is necessary to see the organ that produces the symptom, and diagnose the condition that exists.

Much could be said upon the point of aphonia coming on in connection with diphtheria in the upper air passages, and not only the aphonia which results from obstruction, but the aphonia which evidences the toxæmia of the system which is due to paralysis. I think the subject is a very interesting one, which is too little spoken about in general meetings, and I am glad that Dr. Munger presented it in such a complete way today.

Dr. Oliver T. Osborne (New Haven): May I say one word before Dr. Munger closes. The pathological causes interest me and some of Dr. Munger's paper is exceedingly interesting. I think I would like to ask the laryngologists if they have noted in cases of aphonia coming on at the time of a stoppage of menstruation, or after sudden excitation of a nervous character, and if there was coincidently a swelling of the thyroid gland. It is interesting to me for the reason that the thyroid gland is always enlarged just before and during menstruation, and it will enlarge periodically when, for any reason, menstruation suddenly stops without proper cause. Also the globus hystericus, I believe, means nothing but a sudden swelling of the thyroid gland.

Also there is no question but that the thyroid takes quite a considerable part in sexual excitation, and also we know that where the sexual instincts are in exaggeration in patients, especially in a certain class of women, there is always a hoarse husky voice. And I would like to know whether anatomically the thyroid swelling would have anything to do with the impairment, or the lack of ability to shorten or tighten the cords.

Dr. Carl E. Munger (Waterbury): The only question is that of Dr. Osborne, who inquires what relation the thyroid gland has during the period of sexual excitation in the stoppage of the menses, or during sexual excitement. I don't think we have any opportunity of seeing cases in a condition like that, and I don't know how you can come to any conclusion about it.

On the Use of the Urethroscope in Diagnosis.

CHARLES S. STERN, M.D., Hartford.

In a paper read before the Hartford Medical Society, May 6, 1901, I described various pathologic conditions which contribute symptoms of urethral disease, and pointed out that it was impossible to establish which of several lesions was responsible for the particular case under consideration. Today it is not only possible, but almost indispensable to resort to the urethroscope in a large majority of the cases of urethral inflammation, which persist after the usually recognized treatment has been found unavailing, in order to make a correct diagnosis, and accordingly institute correct treatment. For the urethroscope enables the surgeon to discover any pathological deviations from the normal; to locate circumscribed areas of inflammation, or infiltration; acute or chronic inflammation and hyperæmic or suppurating conditions of the follicles and lacunæ; also the presence of papillomata, polypi, and other new growths; of granulating surfaces, and patches of erosion and ulceration; and of fibrous cicatricial tissue, and other conditions which produce narrowing of the canal.

The technique of urethroscopy is simple. As large a tube as can be comfortably inserted, should be used, the manipulations carried out as gently as possible, and antiseptic precautions of course. The endoscopic tube is to be at once inserted to the deepest point requiring inspection, and then gradually withdrawn forwards, each portion of the urethra thus coming successively under the eye of the observer.

To know what is pathologic, we must first know the normal appearances of the various parts of the canal. Let us suppose we have introduced the tube to the bladder, and that we are gradually drawing it forward to the meatus, and I will describe the appearances which we may expect to find normally at the most important

points along the canal, and note also some of the pathologic pictures most frequently encountered at these levels.

Just without the *sphincter of the bladder*, the urethral mucous membrane is normally of a deep red color. This is similar to the normal hyperæmic appearance within the bladder at the internal sphincter, as it is seen through the cystoscope. If we have introduced the instrument far enough, and the bladder is empty, as it should be, we can see the little *uvula* of Lieutaud projecting from the posterior edge of the ring, though this is often very small or entirely absent.

As we withdraw the tube, the posterior segment of the picture gradually rises above the surface in the central line, this being the upper projection of the *crista galli*. Further along this becomes more marked, and encroaches on the circumference, giving a crescentic appearance to the lumen, the convexity pointing forwards. (Fig. I.) The mucous membrane covering the *crista galli* is smooth, almost without folds, and normally of a pinkish hue like the everted lip. Surrounding the *crista*, like a hood, is seen the mucous membrane of the outer walls of the canal, lying in loose folds of a dark red color. By adjusting the position of the urethroscope so as to separate the wall from the *crista* on either side, we expose the *prostatic sinus*, and it is sometimes possible to see at the bottom of this sinus the openings of the prostatic ducts. These are more visible, however, when they are diseased, or excreting excessively from a diseased prostate. Then they are dilated, and, being redder from inflammation, contrast more sharply with the surrounding mucous membrane. The *fossæ* themselves are a favorite seat of small erosions and ulcerations, which I have found more frequently on the left.

Further down, the *caput gallinaginis* juts into the center of the picture. This is the most prominent point of the *crista*, and usually appears as a smooth rounded head on a broader base, not unlike a collar button. (Fig. II.) It may be larger or smaller in different cases, and also according to the turgescence present — as it acts much like erectile tissue. Its color is a brighter pink than the rest of the *crista*, quite like the everted palpebral conjunctiva; and the lumen here changes to an arched or horseshoe shape. About a fifth

FIG. I



PROSTATIC URETHRA, UPPER PORTION.
1½ cm. below internal urinary meatus.

FIG. II



PROSTATIC URETHRA, MIDDLE PORTION.
Caput Galli and Sinus Pocularis with orifices of eject. ducts.

FIG. III



PROSTATIC URETHRA, LOWER OR PRE-PROSTATIC PORTION.
Gradual depression of Crista Galli.

FIG. IV



MEMBRANOUS URETHRA.

of the distance from its top is a fine slit, which is often barely visible, but sometimes gapes widely, or can be spread by manipulation of the instrument. It is the opening of the *utriculus masculinus*. In favorable cases it can be explored completely, and then we can see below, at the lateral margins of the *sinus pocularis*, two smaller slits; the openings of the *ejaculatory ducts*. Sometimes neither of these is visible; or, only one can be seen; again one is seen as a slit, and the other as a round opening. Indeed, the size and shape of these openings are nearly as varied as those of the ureteral mouths. They are sometimes filled with a viscid secretion, and are more prominent when diseased. Within the *sinus pocularis* the mucous membrane is dark pink. The surrounding wall at this point is still dark red, contrasting with the brighter hue of the *caput*. A small hyperæmic spot, or congested area of perhaps three or four mm. diameter is often found here and is the cause of some irritation. I found such a condition in four cases which had been treated as sexual neurasthenics, and successfully relieved their symptoms by correcting this condition.

We next come to the inferior portion of the prostatic urethra, showing the *lower projection* of the *crista*, or *verumontanum*, reversing the panorama of the upper end; that is, the central projection gradually becomes more depressed, until it disappears entirely, while the lumen from being arched, or horseshoe shaped, gradually flattens out as we approach the membranous urethra, where it assumes a rounded pinhole form. (Fig. III.)

This præprostatic region is a favorite seat of congested areas, possibly on account of the proximity of the compressor urethræ muscle, the strong contraction of whose fibres disturbs the circulation so frequently during the day. At this point bleeding is very apt to be produced by introduction of the urethroscope, or cystoscope, or any other instruments, unless due care is exercised.

We next come to the *membranous portion* inclosed in the fibres of the compressor muscles. We here see the mucous membrane squeezed into very fine folds, as if shirred about the central lumen; which latter is rounded and the size of a large pinhole. (Fig. IV.) Perhaps its appearance may be best described as resembling a small embroidered round hole, the threads touching each other at the cen-

tre, and radiating thence in contact with each other. The color here varies normally from pale pink to pale rose, with a darker shade in the depressions, which gives the pretty radiating picture as described. This portion is least liable to disease, showing a normal appearance more often than any other part of the canal. But an extension of inflammation by continuity of tissue, either from the front or rear is not infrequent, the mucous membrane assuming a deeper rose color and a more swollen appearance, while the radiations are more or less smoothed out. Some fibrous infiltration is at times met with here, often the result of injury due to a too energetic use of the sound.

We now pass out of the triangular ligament and reach the beginning of the anterior urethra. From this point forward, the most diverse lesions and anatomical pictures are successively presented. First, we see the cul-de-sac of the *bulb*, which normally has a deeper red color than any other part of the whole canal, and with a purplish tinge. Here the shape of the lumen is slit like, running antero-posteriorly; and the mucous membrane lies in large folds, four or six in number, but subdivided usually by narrower folds. (Fig. V.) The slit shape of the lumen is due to the action of the ischio-cavernosus and bulbo-cavernosus muscles on either side, and the abundant tissues in this region produce the large folds. The walls of the canal in this region are best examined by eccentricating the lumen and sweeping the tube around the circle, so as to bring every part of the canal at this level under observation.

This part is the most frequent seat of lesions, and naturally so; because it is the bottom of the anterior urethra, slightly below the level of the opening in the triangular ligament, and because immediately behind this opening is the membranous portion surrounded by the powerful compressor muscle, which ordinarily obstructs the further passage of bacteria and other infectious matter. Such inflammatory agents find a safe lodgment here in the protecting folds of membrane, even the stream of urine, but partially washing them away. Some of the lesions seen here are: congested areas of various degrees and extent; ulcerations, superficial and deep, often granulating; erosions and abrasions, papillomata and polypi, and exudates of lymph and fibrous tissue, indicating

FIG. V



BULBOUS URETHRA
Vertical slit-shaped lumen anterior to triang. lig.

FIG. VI



PERINEAL PORTION.
Triangle shaped lumen.

FIG. VII



PENO-SCROTAL JUNCTION.
Horizontal slit-shaped lumen. Glands of Littre.

FIG. VIII



PENDULOUS URETHRA.
Round lumen. Follicles of Morgagni.

repair processes of pathologic conditions with formation of strictures. Tubercular and carcinomatous tissue also occur here. The openings of the ducts from Cowper's glands may sometimes be seen in this situation, though usually these ducts run below the surface of the mucous membrane for some distance and open in the lower surface of the scrotal portion, or even further forward in the canal. If they are demonstrable here, they are dark red and inflamed, and very apt to show a pin point of pus; this would indicate more or less trouble in Cowper's gland of that side.

This description, with some modifications, applies fairly well to the rest of the bulbous and perineal portions, except that the folds become finer and more numerous, and the color of a lighter red. As we proceed, however, we notice several normal changes in the shape of the lumen. From the antero-posterior slit seen at the bottom of the bulb, it first assumes a triangular shape, then becomes almost round, and at the peno-scrotal junction becomes a transverse slit. (Figs. VI., VII.) The diameter also of the canal has become gradually smaller up to this point.

One of the most important lesions, found in the portion just described, is stricture; and the initial formation of this condition may be recognized by urethroscopic inspection, when neither symptoms nor sounds give any indication of its existence. Its urethroscopic picture is well described by Dr. George Luys, of the Hospital Lariboisiere, Paris, whom I shall quote, with apologies, for a poor translation. "In the perineal region, one sees lesions of hard infiltration, characterized by the following: the urethral mucosa, instead of clinging to the end of the tube and presenting regularly radiating folds, indicating normal pliability, is smooth, without folds, pale in color, and does not form well the central lumen of the urethra. That is to say, that as normally spread out, the central lumen of the urethra is reduced to a point, while on the contrary, in cases of stricture, if one draws the endoscopic tube very slowly toward himself, the urethral walls do not cling to each other, but are retained as they are by the fibrous tissue which surrounds them, and thus form a veritable funnel, whose walls seem to have the consistency of parchment."

We now come to the pendulous portion, which, except for that part within the glans, is uniformly of a pale rose color, the radiations or depressions between the folds being of a slightly darker shade. (Fig. VIII.) Here on the anterior surface are seen the little openings of the glands of Littre, little depressions or dark spots, varying in size from as small as a needle's point to as large as a needle's eye. The smallest ones are, of course, invisible. These are frequently the seat of inflammation, and then become easily demonstrable, either as a dark spot surrounded by a red areola, or as a pouting papilla, exuding a drop of clear mucous, or milky, or purulent secretion. Or the opening may have become sealed, imprisoning the secretion, thus forming a miniature abscess, which if undiscovered would increase in size and cause considerable trouble later on.

The follicles or lacunæ of Morgagni, are also very easy of demonstration in this region. Their openings are larger than those of Littre's glands, and more elliptical than round in shape. The sizes of these orifices may be compared approximately to the various sizes of the eyes of ordinary sewing needles. These follicles may be the seat of simple inflammation, or form acute purulent pockets. They may become ulcerated, dilated, and the seat of chronic processes, which are often the cause of protracted gleet, or they may be the origin of sinuses and fistulas, which burrow deeply into the tissues and finally find a vent at the surface of the skin.

These follicles, or lacunæ, are more numerous as we approach the glans' portion; and here, also, they have wider openings with shallower pockets. Some of these are anatomically constant, or nearly so, especially the lacuna magna in the glans' portion, called the valve of Guerin, situated about $1\frac{1}{2}$ cm. above the meatus. This lacuna magna, however, is not *always* present, and on the other hand, we often find a number of other lacunæ just as large, situated not only here but also higher up in the urethra. It is the folds of these lacunæ, all of whose openings are directed towards the meatus, which catch the points of small instruments.

Within the glans the mucous membrane is smooth, having no folds, of very pale pink color, and presents for observation the lacunæ just referred to and the fossa navicularis; the lumen of the

canal again changes in shape here, gradually forming an antero-posterior slit as seen at the meatus.

Pathologic conditions encountered in the penile urethra consist principally of circumscribed areas of inflammation, which are situated most often just within a relatively small meatus, or in the vicinity of the peno-scrotal junction. They may occupy any site within the canal. They are denoted by a deeper red color, combined with a dullness of the membrane, where the surface epithelium has been destroyed. Papillæ and condylomata are found here, and also specific and chancroidal ulcers. The occurrence of vesicles as well as hard and soft infiltrations in this region, should also be mentioned.

The lacunæ are particularly liable to gonorrheal infection, and may then form para-urethral fistulæ. Such conditions are discovered by the urethroscope, and appropriate treatment promptly applied through the same instrument. The lacunæ, as well as the glands of Littre, are also frequently found dilated and in a condition of simple inflammation.

I have been able to give only an outline of the use of urethroscopy in the time allotted me. Many of the diseased conditions which have been barely mentioned in passing, would require many pages for a proper discussion of their etiology, pathology, and treatment.

One or several lesions may exist in the same urethra, and we must see and treat each of them surgically, according to its special requirements. Therefore, in any case of urethral disease which has assumed a subacute or chronic character, we cannot expect to effect a cure until we recognize the lesion. And to this end the only means of exact diagnosis is the urethroscope.

DISCUSSION.

Dr. P. Duncan Littlejohn (New Haven): Mr. President and Gentlemen: I was very much interested to hear Dr. Stern's explicit description of both the normal and pathological urethra. Although this branch is mentioned in nearly all text books, nevertheless the detail with which any of them go into the subject is very limited, and therefore his descriptions were very instructive to me; both from a scientific standpoint as well as from its value in treating and diagnosing many conditions. I was somewhat disappointed, however, in not hearing Dr. Stern describe the technique of the urethroscope's use, and also the instrument which he prefers. There has

been so much written recently about the value of air dilatation in the examination of the urethra, that I had hoped to hear him touch upon that method. The instrument which he showed, I think, perhaps can be improved upon, because of the fact that whenever one attempts to use a cotton swab through this instrument the cotton is very apt to become entangled in the lamp. If one uses an endoscope, with an auxiliary tube for the lamp, the latter is out of the field of vision and therefore does not encroach upon the field in which the operator is at work. Also, the megaloscope is a very useful addition to the urethroscope, as it magnifies about twenty diameters the picture one sees, and in consequence one is able to discover many pathological changes which he might originally overlook.

In two cases I have seen, the urethroscope has been of exceptional value in finding the opening of eccentric strictures where ordinary means had failed. In both of these cases when the endoscope was introduced into the urethra, the opening of the stricture was found with comparative ease. A visual examination, therefore, saved a great deal of time.

Allow me once more to express my sincere appreciation of Dr. Stern's very able paper.

Dr. Edward S. Moulton (New Haven): Mr. President and Gentlemen of the Society: I think Dr. Stern is to be congratulated on the very thorough way in which he has shown us what can be seen through the urethroscope, and the Society is also to be congratulated on having such a scientific paper read to them. As Dr. Stern has treated the subject, he has left very little to those who discuss his paper, because there is practically nothing to add, as he has not gone in any way into the usage, except to show us what is to be seen. The lesson to be drawn from this paper is one which I think most of the profession have neglected, and that is the use of the endoscope. It has not been used as much as the other "scopes" which the other specialists have brought out, yet, it seems to me, in subacute and chronic gonorrhea, that it is as essential to look into the urethra with the endoscope, as it is for the laryngologist to use his laryngoscope to see what is the condition of the vocal cords. Also in the treatment of these cases, an endoscope enables you to put upon the granular patches, and upon circumscribed inflamed areas, very much stronger solutions than could possibly be used through a syringe where you would have to go over normal tissue. You can go down and touch a granular spot with nitrate of silver in a 20 per cent. solution, and then put in salt solution, and it doesn't affect anything but just the spot which you are touching. My own personal preference in these cases is the Otis instrument, where the light is thrown in by an electric light entirely outside, and you can use a larger tube. You have thus more room for making applications and there is absolutely no danger (the tube being absolutely smooth and of polished silver) of the swab coming off from the applicator.

Dr. Charles S. Stern (Hartford): Dr. Littlejohn refers to the micro-

spectroscope and air dilatation, and his remarks are very timely. I don't know whether it will ever come into general use. He claims very much for it, and it may be better, but still I don't see how you are going to make your applications so well through it, because you have got it bulged out with air. If you open it you are going to let the air out. Of course the cotton will catch on the lamp, if you use a big swab of cotton, but generally the lamp holds closely to the tube, as you will see in this instrument, and there is plenty of room alongside of it to put the swab through. In fact, after you have found the spot, you can remove the lamp and put the swab in. However, the suggestion is a good one.

The instrument spoken of by Dr. Moulton is a good one, but I don't think the illumination is as perfect where you get it from a distance.

Dr. Moulton also spoke of touching the spots with a 20% solution. I have frequently touched very bad areas with a 50% solution, and without using any salt after it, and have had no difficulty thereafter.

The important point which I desire to emphasize is, that one or several distinct and separate lesions are present in some part of the urethra in all inflammatory cases that have existed for any length of time, and that these can be discovered only through the urethroscope. I have not attempted to take up the therapeutical value of the instrument in this paper.

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Acne.

MARK S. BRADLEY, M.D., Hartford.

Acne is a disease of the sebaceous glands. The sebaceous glands are racemose glands, simple or compound, and lined with round cell epithelia. They secrete an oily substance, called sebum, which is produced by slow fatty degeneration and ruptures of the cells lining each lobule. The ducts are short and open in the hair follicles or directly on the surface of the skin. The glands found in the so-called non-hairy parts of the skin or those portions supplied with lanugo hairs, are large in size and more complex than those of the hairy parts. They are especially large on the nose, at the labionasal fold and on the cheeks.

Symptoms.—Acne appears in small and slightly elevated red papules, with or without infiltration, which are followed by spontaneous resolution or by central pustulation. This form of eruption does not leave scars. In connection with this, we may have a papulo-pustular eruption arising from the deep connective tissue layers of the skin, a tubercle or a true dermic abscess. These are destructive in their action and slow in their evolution and chronic in their course, and if untreated, leave scars. The location of the eruption is on the face, neck, shoulders, and chest. It is very rare to find it on any other part of the body. The smaller eruptions are rarely tender. The larger, nearly always, are on deep pressure. Comedoes are usually abundant. Beyond the disfigurement and the tenderness of the large pustules, the eruption produces little inconvenience. It is not accompanied by itching.

Etiology.—The active agent producing acne is, without doubt, a certain micro-organism and claimed by Sabouraud as identical to the diplococci of seborrhœa. It is certainly true that a large percentage of the cases of acne have seborrhœa, but it is also true that few cases of seborrhœa, which are over thirty years of age,

have acne. Gilchrist states that he obtains from firm acne papules, which show no macroscopic evidence of suppuration, pure cultures of a bacillus, which he designates bacillus-acnes. Unna also describes a bacillus, which is considered by him the cause of acne. The form of this bacillus is different from that described by Gilchrist. The bacilli must have a favorable soil for their growth. In many cases no defect in the general health can be discovered, but the lesions of these cases are usually limited in their area, and must be ascribed either to some local irritant, or to the plugging of the glands with dust improperly removed. Certain times of life seem to favor infection. The disease is frequently observed to begin at the age of puberty and it is rare after the thirty-fifth year. A large number of the cases present some digestive disturbance, usually caused by faulty and irregular diet and poor hygiene. Many show circulatory weakness, cold hands and feet. In females, menstrual disorders seem to play an important part, the eruption being very much worse, either just before, just after, or during menstruation. The use of iodides and bromides, long continued, sometimes produces an extremely intractable form of acne. Sedentary living, alcoholic excess, anæmia, rapid growth in the young and diabetes, produce a favorable field for acne infection.

Pathology. — Acne is an inflammation of the sebaceous glands and of the follicles of the lanugo hairs, situated within, or immediately adjacent thereto. There is a blacking of the glandular outlet which Unna ascribes to a hyperkeratosis, resulting in comedo formation; this creates the soil for infection by the micro-organism described under etiology. There is inflammation in and around the gland. There is inflammatory infiltration, either completely surrounding the gland, or around the gland outlet. The infiltration around several glands may coalesce, thereby making a large lesion. Breaking down and suppuration usually, but not always, ensues. There may be a small dermic abscess formed by the breaking down of the epithelial lining of the glands. A large dermic abscess results from an abundant suppuration of several glands, the pus burrowing deeply from the bottom of the follicle into the connective tissue. In the large lesions the contents show sebaceous matter, tissue débris and even parts of the hair follicles, mixed with sero-

purulent fluid. In this fluid are also found diplococci and the bacillus-acne. The exact form of bacillus is differently described by different observers and at times staphylococci, although Unna states that these are not necessary for suppuration.

Prognosis.—The prognosis is favorable, the majority of cases being cured in a few months. Some cases, especially those that have continued for a long time with a large number of scars and deep-seated lesions, which are rebellious and obstinate, tend to wear out the patience of the practitioner and patient as well. Many cases, especially those occurring at the time of puberty, make a complete recovery unaided after several years.

Treatment.—As we have seen above, acne is dependent on two causes, the local usually the same, the general or constitutional cause rarely the same. Our first efforts must be directed to a correct diagnosis of these causes. The mode of living, the amount of fresh air and sleep and the diet, must in their turn receive proper consideration and correction, if needed. Constitutional defects must be remedied as much as possible by appropriate medication, bathing and hygiene. Along with the constitutional treatment we must continue local treatment, and as the eruption is due to an infection, we must with great care go over the infected area and remove the comedoes. There is no surer or speedier way than mechanically, but great care must be used that the entire retained mass is expelled, as little good results from removing the mass partially. On this account the instrument, which is no doubt familiar to you, devised by Prof. E. B. Bronson, of New York, effects their removal most completely. All pustules should be carefully opened and cleaned and for this purpose a broad needle seems the best. After the removal of the comedoes, opening of the pustules, the application of an alcoholic solution of bichloride of mercury as strong as can be borne without too much irritating effect, from one-half to two and one-half grains to the ounce. This serves two purposes, first its antiseptic action, and secondly its tendency to produce an exfoliation, keeps the orifices of the glands open and allows drainage. High frequency electricity should now be applied on the area covered by the eruption for its stimulating effect on the vaso-motor system. The length of this treatment

should be about five minutes. The best form of high frequency currents for the ordinary cases is the helicoidal shunt of D'Arsonval, but should more stimulation be desired in a sluggish case, the current form, an Oudin Resonator is much more beneficial. The patient should be instructed in most cases to apply hot fomentations to the infected area at night to prepare for the reception of local medication. This medication should vary as follows. If the corneous layer of the skin be thickened, an ointment containing precip-sulph., 3ss to 3iss to the ounce, should be applied every night until it is properly reduced. If it is a case where the skin is extremely oily, the following should be applied:

| | | |
|---|-------------------------|-------|
| R | Sulph.-Precip., | 3 ij |
| | Etheris, | 3 iij |
| | Tinct. Camphor, | 3 ss |
| | Alcoholis, | 3 iij |

In superficial cases, without deep lesions, the common lotio-alba is of great service when properly made. The best proportion is as follows:

| | | |
|---|--------------------------|-------|
| R | Zinci-Sulphat, | 3 i |
| | Potassi-Sulphuret, . . . | or |
| | Aq.-Rosæ, | 3 iv |
| R | Resorcin, | 3 ij |
| | Glycerine, | 3 ij |
| | Alcoholis, | 3 i |
| | Aq.-Rosæ, | 3 iij |

is often very serviceable.

Cases which are sluggish are well stimulated and benefited by an ointment containing ichthyol, green soap, and sulphur. If there is dryness of the skin, an ointment containing from three to ten per cent. of ammoniated mercury can be rubbed in at night. In cases where there are a large number of deep-seated lesions, nothing acts as well as the application of the Roentgen-ray. We must, however, realize that the Roentgen-ray is a great power for good or for evil and is not justified unless other means fail. The tube

should be a low one, placed ten inches from the lesion and the dose carefully regulated. A weak current for four minutes should be used at first, and gradually the time, but not the strength, should be increased. The eye-brows, mouth, and hair should, of course, be carefully protected. It is not desirable to produce a dermatitis, and it is rare when this treatment fails in the most obstinate case.

DISCUSSION.

Dr. Ralph A. McDonnell (New Haven): Mr. President and Gentlemen. It seems to me that in this paper altogether too much emphasis has been placed upon local treatment. There are three stages of acne that are commonly seen: (1) the mild cases, where an occasional papule or pustule is seen; (2) the cases of moderate severity, where a few papules or a few pustules are present all the time; and (3) the severer cases, where deep-seated tubercles are present and constantly replaced all of the time. These cases are all acne. From the mild cases, the moderate or medium cases develop, and from the medium cases, the severe ones come.

In the severe cases you will find a history of intestinal fermentation, excessive gas formation, headaches, dizzy spells, palpitation, and in many instances distress two hours or so after eating. In the bad cases you will always find a number of these symptoms. Now the bad cases develop from the medium cases, and the medium cases develop from the mild cases.

In my practice I lay a great deal more stress on the internal treatment of acne than on the external, and I don't think it is possible to cure the mild average case of acne without particular attention being paid to the diet and to the digestive tract. In a case with intestinal fermentation, you have got to cut off the things that are digested in the upper part of the small intestine, especially starches, such as breakfast cereals, potatoes, and new breads; you have got to cut off sweetmeats if you are going to get any good results, just as sure as can be. These cases are notoriously severe, even if the food is limited, and are absolutely incurable for years and years, unless you do pay attention to the diet, and that I know and am sure of from personal experience. I have treated a patient of 55 or so for acne vulgaris, and at the same time treated her daughter of twenty or so for acne vulgaris. It is not right to tell a young person that in a few years or a year or two the acne will subside without treatment. It does not subside; you have got to pay attention to it.

Internal treatment is rather important too, as it seems to me; you have got to regulate the bowels, because most of the cases are constipated; and you have got to use intestinal antiseptics: of these, I think the best is ichthyol.

I think external treatment is the least important of all, because many cases will get well without any external treatment if you regulate the diet and improve the digestion.

If there are lots of little papules and comedones, then a general application to cause peeling is proper. A green soap ointment will sometimes peel off the epidermis and liberate the contents of the follicles; this is proper treatment to start with. There are lots of ointments used containing sulphur, but I think that with the medicinal treatment you will get rid of most cases of acne.

The doctor said the prognosis is good, exceedingly good. In a great many of my cases the prognosis has not been so good. They have lasted for a long time. A few months do not suffice to cure bad cases of acne, but a good many months.

Speaking about the X-ray, I think that the X-ray is a very valuable means of treatment locally, but it can only cure those lesions that are already present. It cannot prevent the appearance of new lesions, neither can any external treatment. The X-ray treatment I give in a more concentrated form than the doctor does, to wit, exposures of from five to seven minutes at a distance of two or three inches with a soft tube, repeating it every five days, and get good results. I think it is desirable to produce a mild dermatitis, but not an X-ray burn.

I enjoyed the paper very much and I think the doctor is to be congratulated upon it.

Dr. Thomas M. Bull (Naugatuck): Mr. President and Gentlemen of the Society. I am very much pleased with this paper. I am always glad to hear a man give his own experience in regard to anything that we treat, because I think the experience of a man right here among us is worth more than that of a German or French professor who perhaps never saw an American patient, certainly not one from Connecticut. The conditions vary greatly in different parts of the world in regard to curing diseases, and the methods that he has spoken about, and Dr. McDonnell has spoken of as well, are most of them the same which I have adopted.

In addition to what they have given, I would say at first that I would lay a great deal more stress upon the diet and personal hygiene than almost any other factor. We are often asked if we can cure acne so it will stay cured, and I always tell patients asking this that, if they do the same things which produced the acne originally, they will probably have it again. But, after a certain time in life acne is very rare, that is, perhaps from the fourteenth to the 25th year acne is very common indeed; but after the 25th year it generally disappears. But that is during the time of life in which a person wants the best face they can possibly have, and the matter of acne is of considerable importance for that reason. I have sometimes seen boys who left home and went away simply because they were so tormented by their schoolmates and friends talking about their faces. They became so displeased about it that they left home.

I have seen young ladies who said they were nearly made crazy by the criticism that they had received about their face, and by the sense of humiliation that they felt in regard to such a simple matter as acne.

In addition to the external remedies which have been spoken of, I have sometimes made a mask of either muslin or surgeon's lint, cutting holes for the eyes, nose and face, and then spreading it thick with a paste of oxide of zinc, and on the inside of that, put a little piece of mosquito netting, so it would not stick to the face, and place that on at night a few times. I think it is the best remedy I know of to take the inflammation out of the face. I have sometimes cupped the abscess with small cups. It sometimes alters the circulation, or seems to, and in some cases helps them. I have noticed often where there were a great many remedies for one disease, that there was no one of them entirely successful. I think this is illustrated in no instance better than in acne. In a great many of my cases, while most of them improve, a great many of them don't get well in any six or eight months. It lasts sometimes a long while, and you will have them show up years afterwards, which may mean they have gone through some new indiscretion, or certainly have not been cured in such a manner as to stay cured.

I am very glad to have this question discussed here, and I wish that the profession generally would pay more attention to this comparatively simple and despised subject, for I am sure, in many cases, it makes a great deal of difference with the happiness of any one who is afflicted with it.

Dr. Charles C. Beach (Hartford): Unfortunately I didn't hear the paper, and I can't very well discuss it. I hoped I would be here in time to hear it. Dr. McDonnell was talking when I entered the room.

Dr. J. Francis Calef (Middletown): Mr. President and Gentlemen. It seems to me that there is quite a wide difference between the different cases of acne vulgaris, the cases where the pustules are almost all of them superficial and small, and the other set of cases which have a beginning probably as the first, but after years have gotten to the stage where every one of them is large and inclined to quick suppuration. Pus then forms very deeply in the tissue, and you would see a red elevation of the skin one day, and the next day there may be a large deposit of pus. If you incise that large inflamed reddened surface, you will find a drop of pus at the bottom of it. That led me to what I believe is the only successful treatment of that class of cases. I agree with the gentleman preceding if a few of the pustules are large and inclined to suppurate. Pus then forms slowly and is less important than in the virulent type that I am speaking of now; where in one day the skin is hardened on the face (as the acne is mostly confined to the face and chest), one day the skin will feel perfectly natural in a given point and the next morning there will be a hard induration, reddened and elevated, one-half to one inch in diam-

eter; if that is stabbed to the bottom, a drop of pus containing germs of different kinds is found. If that is left twenty-four hours, the next day the size of the deep purulent cavity is multiplied many fold, and it seems to me that this class of cases which I am speaking of now can only be cured by evacuating every one of those little abscesses, deep down underneath this indurated mass, within a very few hours of its forming. I have never been able, even with the most strict diet and most careful medication internally, in these bad cases, to cure without constant watchfulness to remove these infected centers as soon as they appear, and by putting these centers under daily scrutiny and daily treatment, the condition has been relieved, when no other treatment has been successful. And these patients, at least two or three of them in my experience, have been before the best dermatologists in New York and Baltimore, where they have not been able to treat them every day and would not insist on cutting to the bottom every induration each day. When these patients would come to my office daily, and I could stab them without fear or favor, they would get well very soon. If I left one of them for more than twenty-four hours, new foci seemed to form.

Dr. Charles C. Beach (Hartford): Mr. President, I have heard Dr. Calef talk and I am happy to hear him, although I didn't hear the paper. I think in those cases which he speaks of, there is an extensive suppuration, and what are apparently called abscesses are formed. I will agree that in those cases they should be punctured, but I don't think that is going to cure the disease, or prevent its recurrence. In all these cases we have a general lowering of tone, and the cachectic form of acne appears. In a cachectic form of acne he may cut the abscesses and stab them as long as he pleases, but I don't believe he is going to cure the disease without general internal treatment.

Dr. Jay W. Seaver (New Haven): Just a word from the general practitioner, because we have been favored with remarks from the specialists who seem to disagree with one another to some extent, and I arise to suggest two things; first, I believe that the general practitioner certainly emphasizes the matter of diet in all these cases, whatever the specific cause may be.

In the second place I think the ordinary practitioner prescribes one thing that has not been mentioned by these specialists, and that is why I rise to suggest it, that he usually prescribes the amputation of both hands so that the dirty nails may not infect the skin. (Laughter and applause.)

Dr. Edward J. McIntosh (New Haven): I have noticed a number of cases of stomach and intestinal trouble, especially in the formative period which Dr. McDonnell has emphasized in his statement this afternoon. In fact I have begun to consider acne as a symptom of stomach disease and intestinal disease, rather than as a skin disease. I have had several patients who have improved on the use of antiseptics in the intestinal canal.

Dr. Mark S. Bradley (Hartford): Mr. President and Gentlemen, I always like this kind of a talk. I am one of those that like to go fishing, and, when I go, I like to get a rise, I like a little discussion, I am glad to hear it. I am very sorry that I did not go more fully into the minutiae and details about this matter. With your permission I would like to re-iterate one or two points which I tried to bring out, but evidently did not bring out. I tried to bring out this, that acne is an infection; that the cause of the infection is as Dr. McDonnell claimed. As I said, there are four different forms of bacteria. The form of bacteria is a question in the minds of a great many. Gilchrist says he has a bacteria which causes it. Unna assures me personally that he has it, and that Gilchrist is wrong. I don't decide what causes it, but I do believe, simply from clinical experience and looking over slides in the laboratory, that it is an infection.

Now the point of diet which Dr. McDonnell brought out, and the point of internal medication are very important ones in this trouble, but I did not have time to elaborate upon them. The diet, of course, is most important. All the things which may develop, all the different troubles which may disturb the general condition, have influence on acne. The time allowed for this paper was so short that it would have taken a long while to go down the list of all the different internal medications, of bathing, and hygiene, exercise and diet used in treating acne. I think you will agree with me when I say that this should be done in nearly every case, but the question of personal equation comes in in each one of these cases. So therefore I laid more stress on external treatment, that being more nearly identical in each case.

About the X-ray treatments for acne, the distance of the tube from the skin, of course, varies with the machine. In the static machine you can use it nearer with safety than you can with the coil. I use a coil. And therefore I use a very low tube with quite a distance from the skin. Dr. Seaver's suggestion of cutting off the finger nails is a very good one.

SURGICAL PAPERS

Observations on the General Treatment of Fractures.

ANSEL G. COOK, M.D., Hartford.

The treatment of fractures during the past fifteen years has not made the rapid progress that has characterized the other branches of medicine and surgery.

No great discoveries have been made, and no particularly valuable form of apparatus has been invented. Still, fractures today are better understood and better treated than ever before.

The more general knowledge of asepsis has helped; the uses and limitations of the plaster of Paris bandage have been more clearly defined, and splints and appliances of all kinds are less complicated and more efficient.

Our progress — and I can honestly report progress — is due rather to what we have unlearned, than to what we have learned.

Fifteen years ago, all the text-books that I was able to consult, actively asserted or tacitly admitted that fixation of an injured joint produced ankylosis.

Hamilton was still the great authority on fractures, and Hamilton said, and said emphatically, that in fractures into the elbow joint, passive motion should be inflicted on the joint as early as the seventh day after the injury.

The courts of law accepted the doctrines of Hamilton as proper treatment, the text-books supported him, and the general practitioners of medicine inflicted the passive motion. This they did, conscientiously and industriously, first, last, and all the time.

A reaction, however, was beginning to set in. The younger men who had not felt the personal influence of Hamilton, followed less blindly than their elders. Early passive motion did not always prevent ankylosis. There were plenty of stiff joints in evidence, that had had early passive motion.

On the other hand, immobilization did not invariably produce ankylosis. Hamilton himself, with his long side splint, immobilized the uninjured knee and hip when he set a fracture of the femur, and these joints did not ankylose.

Orthopedic surgeons immobilized very seriously inflamed joints for long periods of time, and these joints frequently returned to their former usefulness.

Lastly, why should injured bones, muscles, ligaments, and tendons, when combined in the formation of a joint, be inflicted with early passive motion, when bones, muscles, ligaments, and tendons considered separately, were universally admitted to require rest and immobilization?

On May 24, 1894, I had the honor to read a paper before this Society, on "*Fixation in the Treatment of Fractures into Joints.*"

I did not believe in the early passive motion of fractures into joints, and I spoke against the practice.

I have never claimed any originality for my ideas, but I was the voice of a very small and feeble minority of the members of this Society, and we had the books, the courts, our brother practitioners, and the laity, thoroughly drilled in the teachings of Hamilton, all against us.

I will quote from my original paper, a summary of the results of my investigations.

Results.

"No normal joint has ever been proved to be ankylosed or even inflamed by immobilization *per se*. If the immobilization has been performed in such a manner as to produce interarticular pressure of the bones, or the bandage so tightly applied as to interfere with the circulation, and produce sloughing or gangrene, the case cannot be considered one of simple fixation.

"Fixation, though it does not cause ankylosis or inflammation, produces important changes in the tissues; muscles atrophy from disuse, bones become more porous and friable; blood vessels diminish in size and number, and in the young, the development of the limb is retarded.

"It seems probable that immobilization would diminish temporarily the supply of synovial fluid and render the membranes and tendons less pliable.

“ I am inclined to this opinion, though Phelps, in examining dogs killed nearly five months after their joints had been carefully immobilized, found the synovial fluids undiminished in quantity, and the tendons, ligaments and membranes in all respects normal.

“ A certain amount of motion is necessary for the growth and development of all the tissues of a healthy joint; when the joint is immobilized, the tissues atrophy and growth is retarded. When the joint is again used, no matter how long the period of immobilization may have been, the tissues regain their normal consistency.

“ When the patient is young, and the period of immobilization has extended over months or years, the matter of retarded development may become a serious detriment to the future usefulness of the limb.

“ Massage is useful in restoring atrophied but otherwise healthy muscles to their former usefulness, in breaking up minor adhesions, and in removing the products of inflammation by increasing the blood supply and thus hastening absorption.

CONCLUSION AND RULES OF TREATMENT.

First.

“ That bony or serious fibrous ankylosis is the result of injury and subsequent inflammation and not of immobilization.

Second.

“ That early passive motion only disarranges the fragments of bone, thereby increasing the production of callous, that it irritates the injured ligaments, and by increasing the inflammation, tends to produce the ankylosis it is thought to prevent.

Third.

“ Immobilization is useful only when active inflammation is present, or until the ruptured ligaments and broken bones have thoroughly united.

Fourth.

The logical treatment of a fracture into a joint, therefore, should be rest and local applications to reduce inflammation. Reduction of the fracture as early as possible, then immobilization

until the bones and ligaments have united — from three to eight weeks, or more, according to circumstances.

Fifth and Lastly.

“Passive motion, massage and use till the tissues become normal, or, if the massage fails, complete rupture of all adhesions under an anæsthetic. The factors which will ultimately determine ankylosis, are the nature of the original injury, the character and duration of the subsequent inflammation, the destruction of bone and cartilage, cicatricial contraction of the soft tissues around the joint, and the age and condition of the patient.”

This paper was written twelve years ago. I am still of the same opinion, and have nothing to add or subtract, but when I first presented this subject for your consideration, it did me more harm than anything I had ever done in my life.

I was called irrational, and unfit to be allowed to treat fractures.

My old friend, Dr. Melancthon Storrs, labored with me in private and denounced me in public, and finally threatened that if I continued my practice of neglecting to make early passive motion in the fractured elbows I attended, the profession would not uphold me, and I would probably lose my place in this Society.

Today I again read this paper, but without fear, for now I am of the majority, and the later text-books uphold my position.

Scudder says, regarding fractures into the elbow joint: “Passive motion should be instituted late rather than early. In most instances, it will be wise to delay passive motion until union is firm—from the fourth to the sixth week. It should be of the gentlest sort; passive motion that is painful, does harm.”

Nobody will criticise this paper unless they say I am wasting valuable time, telling you something you already know. My excuse is that it is sometimes well to review the past, and that there are still living some believers in early passive motion who are as yet unconvinced.

And then gentlemen, after all I have suffered and endured, after all you have said about me and against me, you will perhaps forgive an old man if he says — I told you so.

DISCUSSION.

Dr. Ansel G. Cook (Hartford): I would like to say that Dr. McKnight was in the small and feeble minority when I read that paper twelve years ago, but he has since grown strong.

Dr. E. J. McKnight (Hartford): I don't know that I ever before had an opportunity of claiming priority in anything, but in 1879, only a few years after Dr. Cook was born (laughter and applause), I wrote a graduation thesis upon fractures involving joints, especially elbow joints, and took exactly the same view that he has taken. As that thesis was never published, I cannot accuse him of plagiarism at all. But I certainly have always held these views that Dr. Cook has advanced, and which he advanced twelve years ago. I believe we obtain much better results in delaying our passive motion in fractures involving the joints.

Dr. Leonard W. Bacon, Jr., (New Haven): Mr. President, if I may be allowed to say a word in regard to this paper. I agree with the speaker entirely that immobilization of the joints will not be likely to alter the joint structure. I remember Hupple in his celebrated text-book on anatomy, refers to the case of a woman who had a bony ankylosis of one condyle of the joint, and that continued some thirty years. And at the autopsy thirty years later (it having been completely immobilized for thirty years), it was found intact. I don't think that is the whole story by any means. The reason for making passive motion about a fracture in a joint is not on account of the joint structures as much as it is on account of the surrounding soft parts; but I think that if there is no rather prompt passive motion made about the fracture of the elbow joint, you may get a matting together of the muscles and an interference with the function of the joint that will be very considerably hindered. If you will begin passive motion early, if you put the proper interpretation on that passive motion, it will help. The passive motion that I have been accustomed to practice in fractures in the elbow joint, has consisted in changing the position in which the joint was put up; perhaps after the interval of a week, the joint is put up in a supported position. At the end of a week I take it down, very carefully flex the joint and put it up in a semi-flexed position. At the end of half a week after that, I again take the joint down and move it only a single time and again put it up in position. At the interval of a few days it is redressed and put in a flexed position. A very simple and careful manipulation of that kind can be made, and can be made early without greatly displacing the fragments, and it brings the important extra-articular structures into different relations, so that they do not get an opportunity to become firmly matted together in some one fixed position. And I am perfectly of the opinion myself, that it aids and makes the course much easier for the patient afterwards when the splints are removed, and when passive or

active motion is begun. I am convinced of that, and that the patient will regain a more useful limb and regain the use of the limb more promptly.

Dr. William H. Donaldson (Fairfield): I am very glad to hear Dr. Bacon join the respectable minority, and I want to join with him. I am a firm believer in the use of a plaster cast, but I have seen too much injury done by the indiscriminate use of plaster. I believe that the mistake the old-time surgeon makes today, is in too much immobilization of fractured joints. We all of us within the last few years have been running up against a class of practitioners of a new school, who have taken to themselves the name of bone doctors (they are also called osteopathists), and we have known of a great many cases where good has been done by them, and their secret is not immobilization. I believe we make a mistake in putting up a fractured bone, either near the joint or away from the joint, and keeping it in a quiet position for five or six weeks. We make a great mistake in that we do not take the fracture dressings off frequently, and if we do not use motion, we ought to use massage. That is what we have neglected in the past, and which we are coming to recognize as very important treatment, near the joint or away from the joint. We should bathe frequently the injured limbs, keep them in good condition by general manipulation and massage, which will keep the ligaments, muscles, and skin in a healthy state, and keep all the parts in a healthy condition, by improving the circulation, and get better results. The surgeon who neglects bathing or massage is doing his patient harm and running a risk.

Dr. Ernest H. Arnold (New Haven): I think the statement in itself of Dr. Cook perhaps cannot be assailed in a general way. But I think in a special way, that is in special cases, his statement may not altogether hold. I think it is wrong to ever obey the one doctrine, especially in medicine, and especially in practice. Now I can imagine a great number of cases where you have to vary very much from the general statement put down here. I think in putting up his joints that Dr. Cook has seemed to put the cart before the horse. I think that if there is one fragment only, that is, if the fracture is only in one part of the joint, and that fragment has been properly replaced, and forms union, I think his statement is good and true. But if you have two fragments, one over the condyle of the humerus, and one perhaps over the radius or the ulnar, suppose those are not properly replaced (and they are not always properly replaced as you well know). If you let your passive movement go for five or six weeks and do not institute passive movement until you have firm union, then you may never discover that you have an ankylosis there, a bony ankylosis, not a fibrous one. The passive movement might have informed you of the misplacement of those small fragments.

Then what the term "firm union" means is an elastic one. If your passive movement is of such a degree and force that the union is firm, then you can do no harm, and that may be well done, as you know, from the eighth day, provided, that your passive movement is done with very little

force, feeling your way so that the fragment will be firm enough to stand that passive motion. Therefore, in that case, Dr. Cook's general statement will not hold and I entirely agree with Dr. Bacon. I think the very first thing in a fracture of the joint is, after all, the diagnosis of the fracture. And the second thing, after making a correct diagnosis, is to replace the fracture so that it does form firm union. I have seen any number of fractures about the elbow where the fragments were so replaced that they could never form any union at all. Now passive movement there would always do harm, of course, and so would fixation; so it depends a great deal, I think, on what you have to deal with. And it depends a great deal on how you make your passive motion.

I feel that fractures of the joint have had a new light shed upon them by the X-ray. We know now where our fracture is, we know now how we have replaced it, we know whether we have put them in place, or in apposition, so as to get union, and, having those conditions known, we make intelligent passive movements early.

We also know nowadays that a great many of these fragments are so small and so subject to muscular contraction that by no means, by plaster cast or in any way, will you succeed in fastening them in the proper place without having a large callous in consequence of the irritation and displacement; that you will get there either a contracted or ankylosed joint.

I am of the opinion that with the aseptic surgery of today these fragments should be joined properly and immediately, and having seen them done properly, we can institute passive movement early, with no hesitation. I have no hesitation in manipulating such a joint after the 5th or 6th day, and getting good results.

Dr. Allen H. Williams (Hartford): Dr. Donaldson said he didn't agree with Dr. Cook, but he agreed with Dr. Bacon. I agree with Dr. Donaldson, but I don't agree with Dr. Bacon. Dr. Donaldson made a very good point about massage of the muscles. I don't think Dr. Bacon is quite correct when he speaks of the muscles matting together and the soft parts matting together. They will atrophy certainly to some extent, and you will get a certain amount of stiffness. For that reason I think our dressings ought to be removed frequently, and there ought to be a certain amount of massage. I do feel, however, that Dr. Cook is correct when he says in most cases one should keep the bone surfaces practically immovable. I think there is no greater mistake than to put on a plaster cast and leave it, thinking the bone will take care of itself. But I also think that in most cases early passive motion of the bone is a mistake.

Dr. Ansel G. Cook (Hartford): Mr. President, I think we are a good deal nearer together in practice than we are in theory. I always take down my fractures every week, sometimes every day, look at them, and see how they are getting on. There are a great many awful things that have been done with splints and plaster of Paris and bandaging, but that doesn't affect the principle.

On the other hand, it makes a great difference how you make your passive motions. You have seen children swing on doors and gates, wrenching themselves up and down. But that is rather violent passive motion. I think Scudder has the right of it.

However, this discussion is very mild, compared with what I got twelve years ago. I am delighted. I will try it twelve years from now and I think you will be ready for it then. (Laughter and applause.)

Further Observations on Gastric Surgery.

H. M. LEE, M.D., New London.

At the last meeting of this Society I read a paper dealing for the most part with the surgical aspects of gastric ulcer, with the report of an operation in a case of multiple gastric ulcer. That gastric surgery has advanced, in a few short years, as to have become one of the greatest triumphs of modern surgery, and that in the advancement it has been proven to be not only efficient as a radical curative measure but also as a palliative measure in certain diseases, giving relief from pain and suffering which no pen can justly portray, forces its triumph upon us and holds our attention. It is my desire, therefore, to bring before you a few facts now established, in regard to the stomach as a point of attack by the surgeon, and to particularly call attention to malignant disease of this organ.

In view of the fact that in surgery we have a means of radical, positive cure of disease or conditions, and that it is in this sphere where surgery is attempted in the vast majority of cases, the palliative measures we have recourse to in surgery are apt to be overlooked, but if so, surgery is robbed of one of its most brilliant aspects. Nowhere is this department of surgery more perfectly seen than in certain diseases or conditions of the stomach.

Beginning with the operations of gastrotomy in 1840, by Egebert, in 1874, successfully by Jones, surgical interference in stomach cases rapidly advanced up to a certain point, and after such operations as gastrotomy, gastro-plication, operations on the pylorus, had been completed and obtained a standing in surgery, a lull came, lasting for some time. In the year 1893, operations upon this organ took a new start, when Czerny, Mikulicz, and others, attacked the stomach for relief of gastric ulcer. From 1894 to 1898 several operations for relief of gastric ulcers, with excellent results, were accomplished. Upon these brilliant achievements came an opera-

tion by Schlatter in the year 1897, for complete removal of the stomach. In the space of two years three operations of this kind had been accomplished. That complete gastrectomy may have been an operation of too radical a nature, seems possible, and appears probable now, but it was a great stride in gastric surgery, and from this extremely radical operation has arisen, what is today, one of the brightest achievements of the surgical art, for there has been developed the operation of partial gastrectomy, which in many cases of malignant disease of the stomach gives a fair chance of cure, and in favorable cases, a complete cure can be accomplished.

As I have previously stated, it is my desire to bring before you the field that surgery opens up to us in the malignant diseases of the stomach, and in so doing, shall quote statistics of men who well might be called pioneers in this work.

I shall refrain from giving histories of cases in my own experience, as well as going into details of various symptoms and diagnosis, limiting this paper to a few technicalities of operative procedures, but above all, appealing to the general practitioner for more early diagnosis and his sanction for radical treatment.

But a few years ago malignant disease of the stomach carried the patient to death, while all that could be done, or was done, was to aid the unfortunate along the way, relieving partially at first, not at all later, till worn out by the suffering, as well as starvation, morphine alone made the last of life hardly bearable, and death gave the only relief.

I want to impress upon you the fact here, that when the pyloric orifice becomes so constricted by a malignant growth that motor insufficiency of the stomach begins, or even before motor insufficiency is well established, the patient is starving, and it is a great point to decide whether the picture before us is not due as much to starvation as to malignant disease.

I am convinced that in the early stage of the disease, starvation is the main factor which pulls the patient down, and would deter many medical men from consenting to radical measures. In the later stages, with the disease advanced beyond a possibility of radical cure, starvation is still a potent death blow.

To illustrate, allow me to mention this case briefly, which I operated upon last December. This was a case beyond any possibility of a cure. The tumor mass was very large and noticeable on inspection. The man was close to death. The palliative operation of posterior gastro-jejunostomy was done, from which an uneventful recovery was made. The patient before operation crying for food, which could not be retained, dying as much from the lack of food as from his cancer; after operation ate anything and all he wanted, without one pain or any discomfort, and in eight weeks gained twelve pounds.

Let us for a moment look at the anatomy of the stomach as it relates to malignant disease.

In the first place it is a well established fact that the majority of carcinomata of the stomach at first grows slowly. The stomach wall seems not to be susceptible to rapid infiltration. The pyloric orifice is the seat of malignant disease in 60% of malignancy of the alimentary tract, in 80% of cancer of the stomach proper.

The lymph system is of all importance in dealing with any malignant disease. The lymphatics of the stomach, as worked out by Cuneo, shows up one or two important facts. First, the lymph channels and glands lie in the layers of the peritoneum, going to make up the gastro-colic and gastro-hepatic amenta, and are very accessible and easy of removal, and too, the glands on the lesser curvature are contained in the stomach wall and the chain is broken a little short of the junction of the œsophagus and stomach. Hence it is that if, as is the case in all favorable cases for operation, the stomach is removed through a line running from this point on the lesser curvature, down to a point beyond the glands involved at the greater curvature, the infected area is well removed, and only a portion of the stomach resected. In fact, it is stated by some that, owing to the formation of the lymphatic, along the lesser curvature, this portion of the organ should always be removed. The chain on the greater curvature ceases at about the junction of the two vessels here located.

The anatomy of the stomach thus teaches us that malignant disease can be more thoroughly removed than is the case in most other portions of the body.

It is pertinent here to ask if these unfortunate cases of carcinoma of the stomach should not be given the same consideration by the physician as is given to malignancy elsewhere? I feel that many of you would say "yes," and I am sure that only a few years will roll by before this will be the established rule. Why not extend to these patients the same help as we extend to others? Carcinoma of the breast often comes to the surgeons; cancers of the cervix and uterus are frequently operated upon; malignancy everywhere is attacked radically. In no part of the body is there a better opportunity to thoroughly eradicate these growths than there is in the stomach.

On the general practitioner much depends for early diagnosis, and early operations are going to give us best results, and will surely lead on to the brightest plains of surgery.

What is the favorable case, and how determined? Briefly this: given the patient of proper age for malignant tendencies, be suspicious of the constant complaining of such symptoms as could be called the various forms of dyspepsia; determine the digestive powers of the stomach, its motor functions, and if, under proper care after the use of the clinical laboratory as an aid to your diagnosis, the patient still goes on worse or not improved, be more suspicious. Above all, if you elicit a history of a previous gastric ulcer, beware, for it is estimated that as many as 50% of the cases of gastric cancer give such history, even though the ulcer antedates some twenty or thirty years; and, at last, if still in doubt as to whether or no a malignant disease is going on, resort to exploratory operation. Do not wait until a tumor can be distinctly felt or even seen, for true it is that the more easily recognized is the tumor mass by palpation, the less favorable is the case for radical cure.

Here is a most important sphere where the clinical laboratory will aid you. Let me impress, however, that exploratory incision should be made, not to confirm but to make the diagnosis.

What of those hopeless cases, those cases where the outlook is certain death in all its horrors, where the patient dies of malignancy, of starvation and in agony? It seems to me that here is a work, too, for us, and if, with little risk to life already beyond the counting of a risk, we can relieve these sufferers, can again allow

them the pleasure of eating without pain, can cease the suffering, and give comfort, can give a little longer lease of life, truly it is our duty to do so. Such can be done by proper drainage of the stomach through the establishment of a posterior gastro-jejunostomy. Such an operation is feasible, is just.

This view is held by men who are pioneers in this work. If it has been your fortune to see, as I have, its results, then you could but be staunch in its favor. Dr. Blake, who is doing such excellent work in this line, said to me regarding this procedure, "I believe in gastro-jejunostomy as a palliative procedure in pyloric cancer, and find that it gives about four months of freedom from symptoms and then the patients die quickly of their disease."

As regards the technique of operations upon the stomach, little have I to say. First, bear in mind that the stomach allows of much severe manipulation without causing any untoward symptoms afterward. That a patient can be given little anæsthetic, for during operations the work upon the stomach causes no distress.

Regarding technique, allow me to say that I think the mechanical appliances should be abandoned and anastomoses accomplished by suture alone.

Since writing this paper I was pleased to find that Moynihan states in his last work that mechanical means should be discarded. True they have been a great step, and an aid in anastomatic operations; have made surgeons bolder and led the way back to *sutures* because sutures now perfected seem best.

In performing posterior gastro-jejunostomy, I have made it a point to unite the layer of the gastro-colic omentum firmly to the posterior wall of the stomach by interrupted suture, and carrying a continuous suture over the openings in the stomach and intestine, with the view of a firmer union and also preventing any spur formation. This additional suturing requires so short a time that the operation is not prolonged. The approximation of the gut to stomach, I believe, should be just far enough from the beginning of the jejunum as not to cause any stretching, but not far enough to cause a loop of jejunum to hang down loosely.

The operation of partial gastrectomy needs no comment, except to say that by the improved methods of Billroth, so finely outlined

by Mayo in Jour. Am. Med. Assoc., it can be practically bloodless.

Let us look at statistics:

80% of carcinomata of the stomach are at the pyloric region and lesser curvature.

10% in the walls.

10% at the cardia.

Thus 90% are amenable to direct attack by the surgeon.

In the remaining 10% gastrotomy can, at least, prolong life.

Graham showed that 50% of gastric carcinomata gave a history of gastric ulcer.

Dowd found in the United States census of 1900, 9,000 died that year of gastric cancer.

In regard to operations:

In Mayo's 100 cases, 14 died; 27.7% lived 3 years; 22% alive and well after 3 years.

| | Cases. | Deaths. |
|---------------------|--------|---------|
| Mikulicz, | 100 | 37 |
| Kronlein, | 50 | 14 |
| Kocher, | 75 | 20 |

Each year has decreased the death rate in all stomach surgery, till now partial gastrectomies and gastro-jejunostomies give remarkably small death rates comparatively, and the release from suffering by these measures, the prolonging of life in comfort of these unfortunates, makes this field of surgery, to my mind, truly a triumph.

In closing, I wish to plead that early diagnosis, when this malignant disease is in its beginning, is of all importance to both the patient and the surgeon, and I want to emphasize the fact that in cases where a reasonable suspicion of cancer exists in the mind of the physician, and, after all, in the first stages of this disease a reasonable suspicion is about as close to a diagnosis as we can come, do not wait, but resort to exploratory laparotomy. Let it be that the diagnosis is made by laparotomy, not the laparotomy made to confirm diagnosis.

DISCUSSION.

Dr. William F. Verdi (New Haven): Mr. President and Gentlemen: It is a strange fact, but it is true, that it takes the internist a very long time to see the advantage which can be accomplished by surgery. We have all been through this process with appendicitis and with gall stone diseases. Of course the great drawback to the immediate resort to surgery has been, previously, the bad results which the surgeons experienced in these operations. In mostly every case of appendicitis, some ten or twelve years ago, which the surgeon was called upon to operate, the results were extremely bad. It was not the surgeon's fault at all, but it was because the patients came to him too late, general peritonitis had started up, and, of course, the mortality was very high in those cases. I don't believe now that there is an intelligent practitioner in any community who does not resort to the surgeon as soon as he has made the diagnosis of appendicitis. It is through this means that the brilliant results have been obtained in the treatment of the appendix and also in the treatment of gall stone diseases.

In the stomach the surgeon is called upon to treat three different pathological conditions; you have the carcinoma, the ulcer, and the stricture of the pylorus. I believe myself that carcinoma of the stomach, as carcinoma of the tongue and larynx, are extremely malignant, and the spread of the disease is very rapid as compared to carcinoma of the breast. Carcinomata of the stomach, I think, in order to get good results, must be attacked very early. As Dr. Lee has pointed out to you, the lymphatic supply of the stomach is now distinctly established, the glands running along the lesser curvature and toward the pyloric end of the stomach, are thoroughly established. Hartman, of Paris, a very modest and brilliant surgeon, has devised a radical operation for gastric carcinoma. He removes, in every case of carcinoma of the pylorus, the whole of the lesser curvature of the stomach. That is very important, because the glands of the lesser curvature drain the stomach so that any one of those glands that may be left behind, may contain carcinomatous cells and cause a recurrence afterwards. I believe that an operation for carcinoma of the stomach should not be made if the carcinoma has already spread out to the peritoneum and caused adhesions to the pancreas and the duodenum below, and to the gall passages. I think it is perfectly useless to perform any operation. In those cases gastro-jejunostomy is the proper procedure. It relieves a great deal of suffering and causes the patient to live a little longer, but, of course, it is not a radical procedure. In gastric ulcer, although I have not enough experience to speak with much authority, I do not believe myself that the gastric ulcer should be similarly attacked. First, the ulcer should be removed, and the rent in the stomach sutured. I do not believe that it is wise to resort to gastro-jejunostomy just because there is a gastric ulcer.

A few years ago in Washington, Mickulicz and Moynihan, both were very strong in their assertions that these openings, this gastro-jejunosomy where the pylorus was patent, did not last very long, that is, the opening between the stomach and intestines always closed in a few months if the pylorus was left open.

Dr. O. C. Smith (Hartford): Mr. President and Gentlemen: This is certainly one of the most important questions of the hour. Although surgical operations have been performed upon the stomach for a number of years, the greatest development of the subject has occurred during the past five years.

Dr. Lee has very thoroughly and admirably covered the ground. I am glad he has emphasized the importance of early diagnosis. It would almost seem today as if the technique had about reached the height of its excellence, but that is always a dangerous statement to make, because as we go on we continue to develop better methods. However, the results show that operations upon the stomach, in competent hands, such as gastro-jejunosomy, pylorotomy, gastrotomy, and gastrotomy are comparatively safe. I have never seen a death on the table from gastrotomy or gastro-enterostomy. In the last one hundred and fifty cases of gastro-enterostomy performed by the Mayos, they have lost but one patient, so we do not have to look upon these stomach operations now in such a serious manner as we did a few years ago. We would then watch and wait, try medication, and see our patient go down in strength and flesh, and delay operation until the opportunity had passed for any radical procedure. It is true we have gone through this same discussion in other fields of surgery, but there is more excuse for delay in stomach surgery than in gall bladder disease and appendicitis. The gall bladder and appendix are obsolete organs. We may remove them, and we have done no harm if we remove a comparatively normal organ, but when we remove a portion of the stomach, or change the normal channel of the current, we must have a functioning organ remaining.

These operations are not to be undertaken lightly, but the cases are to be carefully selected. In cases of dilated and flabby stomachs, without pyloric constriction, in gastritis, and in neurasthenia, it is unfortunate to operate, because, as a rule, these patients will not be benefited, and it injures the reputation of the operation. The most important factor of this whole matter is that of correct preliminary searching diagnosis before we operate at all. We may properly do exploratory work if we are undecided, but do not attack the stomach, do not establish a gastro-enterostomy unless you are fairly certain of the diagnosis.

The stomach is alarmingly subject to cancer. Twenty per cent. of the cancers of the entire body occur in the stomach. The remarks of Dr. Lee in relation to the anatomical distribution of the lymphatic glands holds good with other organs. In the uterus, cancer of the cervix is extremely dangerous, and more difficult of radical removal. In the gall bladder and

urinary bladder, diseases at the neck more rapidly invade the surrounding tissues by reason of the numerous glands. Infect the gall bladder near its cystic duct, and immediately you have high temperature, but stones in the fundus may give no temperature or constitutional symptoms. This glandular arrangement, which is an anatomical law, is extremely important to remember in operations upon these organs.

Some men tell us it is not worth while to do gastric analysis or blood examinations, but advise an exploratory laparotomy. This is unfortunate. Of course these means are not positive for diagnosis, for there is nothing absolutely positive, nothing pathognomonic in stomach analyses and blood examinations, but we need every aid, and these means are a very great aid in many cases. Be as accurate as possible before you proceed to operate.

Now, as to methods. Dr. Lee says the suture method in gastro-enterostomy is the best, and I believe we all agree with that for the majority of cases. There are instances, however, of patients being so extremely feeble that we have to do a more rapid operation. For them the Murphy button is fairly successful. For others the McGraw elastic ligature is better. I think the methods have been so thoroughly discussed and written about in the last year, and are now so well understood, that it is a work of supererogation to go over this branch of the subject. I wish to lay most emphasis upon the importance of the preliminary diagnosis.

Dr. John B. Boucher (Hartford): I am sure we all enjoyed the Doctor's paper very much. There was one point, that is for the general practitioner to make an early diagnosis. I would like to emphasize that point. I think we are all agreed that the experimental stage in gastric surgery has passed, and we can obtain nearly as good results in surgery of the stomach and duodenum as we can in any other part of the body, if an early diagnosis is made.

I would say it is necessary to go back one step. Gastric ulcer is certainly the cause of gastric cancer in about 50% of the cases, according to the statistics of the larger operators. If we consider that in our diagnosis, we will find a history of gastric ulcer in over 50% of the cases where we suspect cancer especially at the period when the powers of nature are beginning to decline, say about forty or fifty years of age.

The carefully prepared statistics of Wilson show that in 67 cases they found cancers in over 50%. Surely the operation in cancer of the stomach promises well and promises good results if taken early; but the operation on ulcer at an early stage will give us much better results.

There is little need of speaking on the surgical technique. That is fairly well established.

I want to make one point in regard to chemical analysis and microscopic examinations. I believe we should make all the examinations, both chemical and microscopic; but we must bear in mind one thing, and that

is that these examinations are simply to help and aid, and we must not depend upon them in making our diagnosis of cancer. We thought a few years ago we had, in the absence of free hydrochloric acid and the presence of lactic acid, an infallible indication of cancer. That is not true. Over 50% of the cases show that free hydrochloric acid is present in a large percentage, and that lactic acid is absent in over 33 $\frac{1}{3}$ %. Free hydrochloric acid is absent and lactic acid is present in less than one-half of the cases. Any rule that has over 50% of failures is not of very much value.

Dr. Louis M. Gompertz (New Haven): Mr. Chairman: I have listened with interest to Dr. Lee's very able paper. Dr. Lee said that in case of reasonable doubt an exploratory incision should be made. I firmly believe that the diagnosis of gastric cancer can be made by a microscopical and chemical examination long before the presence of a tumor or the characteristic symptoms of carcinoma are found. I have seen many cases in which this has been done. If we wait for a tumor, as we all know, the case is lost. Dr. Lee spoke of ulcer as the starting point of carcinoma. Professor Oestreicher, of the University of Berlin, said that from 50 to 60% of the cases of carcinoma had their beginning in an ulcer.

To show the value of making an early diagnosis and how it can be made, I wish to relate a case I saw last August. A man consulted me with vague dyspeptic symptoms. He presented himself in the evening, and he was given a meal containing rice, which had not been very well cooked, rice being very hard to go through the pyloric opening if there is any obstruction. In the morning the fasting stomach was found to contain lactic acid, food remnants, and the Oppler-Boas bacilli.

After a Boas-Ewald test breakfast free hydrochloric acid was absent, and the total acidity was very low. The diagnosis of cancer of the pylorus was then made. He was operated upon by Dr. Sanford, the tumor was examined by Dr. Bartlett of the Yale Medical School and proved to be cancer. The man has improved and has gained forty pounds. There is one case.

I saw a case in Dr. Cohnheim's clinic in Berlin, of a girl eighteen years old, where a microscopical examination was made of the stomach and the same results found as in this case and the girl was operated upon, and, as far as I know, got along very well and began to grow fat. The trouble is with the internist; he doesn't go about it to make his early diagnosis in the right way. Lactic acid cannot be found after a test breakfast unless it is there before. The way to do it is to examine the man on an empty stomach. There are three things to determine: (1) absence of free hydrochloric acid; (2) the presence of lactic acid; and (3) the presence of the Boas-Oppler bacilli. If the bacilli are found as well as the lactic acid, in ninety-nine per cent. of the cases you have a cancer of the pylorus. It is not necessary to make an exploratory incision, but a diagnosis can be made by laboratory methods. The case should then be sent to the surgeon, who should know what he is going to find every time.

Dr. D. Chester Brown (Danbury): Mr. President and Gentlemen: I want to speak in relation to Dr. Verdi's statement quoting Mickulicz and Moynihan, that if you operate and do a gastro-jejunostomy on a gastric ulcer, and the pylorus remains patent, the opening will soon close into the intestine. I had an opportunity of making an autopsy on a gastro-jejunostomy operation which had been done on a man, who was in a desperate condition from pyloric ulcer. Three years he lived in perfect health, gained weight, went about his business and enjoyed life. He died of pneumonia. I made the autopsy and found the pylorus patent, the opening into the jejunum perfect, and the union between the stomach and the jejunum was so finely acquired that you could scarcely tell where it had joined.

Dr. Harry M. Lee (New London): Gentlemen, I feel that there is little to say, except, I think, we cannot insist too much on the point of diagnosis. As Dr. Verdi has said, it is important in every case of cancer of the stomach for the surgeon to remove the lesser curvature. It is not wise, because we feel no glands, to think the glands are not involved.

And it is often found in this condition, that the glands nearest the malignant growth may not be involved, whereas the glands further away may be the seat of carcinoma. In every case it is necessary, it seems to me, to make the operation still more positive and to get better results to remove the lesser curvature of the stomach. Favorable cases are the cases for operation, and by this I mean not the case where the tumor mass is felt and where glandular involvement is found, but the favorable case, which we want to operate upon and the case where we will get good results, is the case where the diagnosis is made by the clinical laboratory. I desire to say to those in the general practice, don't wait until you can feel the mass. If you can't avail yourselves of the clinical laboratory and the microscopic diagnosis in a suspected case, don't wait, but make your exploratory incision, and then let that make your diagnosis.

Gastro-jejunostomy has unfortunately, however, received a black eye, because there are people who are operating all the time, who are not prepared to do the work. It is so in all advancement, and it is particularly so in surgery. Gastro-jejunostomy properly done is a palliative measure, and one of the most brilliant achievements we have, but many times in dealing with an ulcer, the ulcer can be directly attacked.

In cases of gastric ulcer it would be my opinion, where we attack the ulcer, not to further interfere with the patient, and to change the current of the intestinal contents. The diagnosis is of all importance, and it is so difficult to be sure, that I cannot too strongly say that we must resort to the expert and to the clinical laboratory. If gastric ulcer, in my opinion, were more properly looked after today, our cases of carcinoma of the stomach would diminish. It is only too true that 50% or more of these ulcers are cases of malignancy later on. It seems to me we are on the edge of a field of work that is opening up a great outlook

for us. If these operations are done in a proper case, we will get proper results. The man who operates for the sake of operation could not do this work, nor the man who has had a chance of seeing one or two cases, perhaps done in an improper way. I feel that we are being piloted by such men as the Mayos and a few others in the right channel, and the time will come when this is going to be a brilliant operation in surgery.

Intestinal Anastomosis, with Special Reference to the Murphy Button.

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In selecting the title to this paper, the writer has chosen a well-worn subject which has filled surgical literature for the past fifteen years and has left at the present time, at least, a few interesting features which are still unsettled. The advocates of the various methods of intestinal anastomosis have regularly selected some one operation which has been advanced for general use as the best, failing in many instances to appreciate the limitations which apply to any one operation, however good, and also overlooking the fact that what is often simple and speedy in the hands of a surgeon of special experience, is not as easy for the average surgeon deprived of it. It will be, then, the endeavor of this paper to treat the subject impartially and from a practical standpoint.

The surgery of the intestines dates back to ancient times. Intestinal suture was described by Celus in A. D. 20. There is definite literature on this subject by the Italian surgeons of the middle ages; de Saliceto, in about 1500, sutured the intestines, using the trachea of a goose to keep the lumen of the bowel open, the edges of the intestine being approximated by four interrupted sutures known as the suture of the four masters. In the thirteenth century four monks saved from death a case of intestinal injury by inserting the trachea of a goose into the lumen of the bowel. Ramdohr, in 1730, reported a case of recovery from an operation on the intestine in which a single suture held in apposition one cut end of bowel invaginated into the other. Ambroise Betrandi, in 1769, sutured the intestine over a piece of dried calves' trachea, softened in alcohol, which was covered with balsam of Peru. The tracheal rims were found in the fæces on the fortieth day. The patient recovered. Sentiment from 1700 until early 1800 was in favor of

leaving wounds of the small intestine open. Early in 1800, most of the methods were directed toward the formation of an artificial anus through an abdominal wound and various sutures and loops were suggested with this end in view. Schacher treated a successful case in this manner in 1720. In 1824 came the first revolution in intestinal surgery when Lembert described the stitch which united the adjacent serous coats of the intestine and which is known today as the Lembert stitch. From this time until 1883, the progress of intestinal surgery can be well appreciated from Reichel's research of the subject in a collection of reports on one hundred and twenty-one known cases. It was in 1887 that the first great stimulus was given to the subject by Senn, who suggested decalcified bone plates as a means for intestinal anastomosis, with a report of successful cases. The Senn plates were flat, round, or oval, less than two inches in diameter, with a lumen of about an inch. They were equipped in each quadrant with catgut loops and were inserted through adjacent incisions in the intestine and tied in place by the loops, the union of intestines being completed by Lembert's sutures. This method was well adapted for lateral anastomoses of large intestine. The enthusiasm that started from Senn's method, resulted in the use of a large number of different mechanical aids in intestinal surgery and really marks the development of this principle. Many were more ingenious than useful. Abbe's catgut rings were used in a number of instances, Abbe reporting successful cases by this method soon after Senn. Among the various other mechanical contrivances suggested between 1887 and 1892, were vegetable plates, potato and turnip, by Von Baracz and Dawbarn; segmented rubber rings by Brokaw; raw hide plates by Robinson; cartilage plates and gelatine plates by Schrively; bone tubes by Paul. In 1892, Murphy offered the button as a means for intestinal anastomosis. It is a matter of historic interest in this connection, that Denan's rings, suggested in 1847, are strikingly similar to the Murphy buttons. At the outset, intestinal anastomosis by means of the Murphy button received much unfavorable comment in this country and especially in England where Hutchinson, before the clinical society of London, reported fifteen cases of primary resection for gangrenous intestine

in which the Murphy button was employed with only one recovery. In the following discussion the button was generally condemned. In America, the hesitation which first marked the use of the Murphy button changed to general popularity and our surgical literature from 1893 to 1900 abounds in reports of favorable cases. Murphy, June 6, 1900, collected sixteen hundred and twenty cases, out of which in only three instances could a fatal result be traced to the button. In this list of cases, the button was found retained in the stomach twenty-two times; in the colon five times; in the ileum two times; in the jejunum once; in the cæcum two times; in the rectum four times; a truly remarkable record of cases. Since 1900, the popularity of the button as a means of intestinal anastomosis may be said to have waned; due in part, perhaps, to the perfection of the suture and various other methods of anastomosis after resection.

In this connection a brief history of the intestinal suture is important and I will begin with the Lembert stitch. This was suggested by Lembert in 1827 and was based on the principle of uniting serous surfaces to serous surfaces. This method was open to two objections. First, it afforded a lumen of insufficient strength; second, it resulted in a curling in of the mucosa; yet the stitch itself remains an important factor in most of the suture methods at the present time. The objection to a suture that pierced the mucous membrane lasted a long time. It was finally overcome, and the fact demonstrated that a secure union of intestinal surfaces required a stitch that included the submucosa. As the submucosa in places is of a smaller diameter than a fine needle, the necessity of including at least a portion of the mucosa was soon made apparent and the Czerny modification of the Lembert suture was one of the means suggested. Czerny used a deep layer of interrupted sutures reinforced by Lembert's stitches. At the time of the introduction of this method there was a strong prejudice against the use of a continuous suture in intestinal anastomosis, on account of the unequal cutting out of stitches and a resulting weakness in the line of union. This objection was proved to be theoretical only. In 1892, Maunsell offered the method of anastomosis by means of invaginating one end of intestine into the

other. The two surfaces of cut intestine were drawn through a longitudinal incision in the intestine about one inch from the cut edges. When in position, union was effected by a continuous running suture through all the coats. The sutured intestine was drawn back and the longitudinal incision closed. Lembert's stitches were employed to cover in the first continuous suture line. The advantage gained in this way is apparent. The operation is secure and quickly performed. The objection to it is the extra longitudinal cut. The Maunsell method undoubtedly suggested the Connell suture, described by N. E. Connell in 1893. Connell sutured one-half of the cut intestinal ends after they had been brought into position side by side by a continuous mattress stitch piercing all the coats, changing in the last half to an external mattress stitch leaving the loops long until the suture was complete then drawing them tight and reinforcing the two external knots by means of Lembert's stitches. In 1903, F. G. Connell modified the method by using an interrupted mattress suture and tying his knots internally. He reported sixty-four cases operated on by this method with twenty-one deaths, one of which was attributed to faulty union. The advantages claimed for this method are less danger of leakage, strength at the mesenteric border, less liability to necrosis and adhesion. The principles embodied in the Connell suture certainly hold good at the present time although the suture itself has been variously modified. These principles are, in the first place, a maximum of security. In a continuous suture, the cut surfaces of the bowel are subjected to a uniform pressure. There is no bulging between the stitches as a result of distension from gas or faecal matter. This condition would not hold true in the case of interrupted sutures. Secondly, a maximum of speed. A continuous suture requires much less time than any form of interrupted. It is by no means possible in this short paper to enter into a detailed discussion of the various intestinal sutures. The method, however, of McGraw suggested in 1901 should be mentioned. He uses the elastic ligature as a means of approximation. McGraw tied the ligature interruptedly, passing it while stretched. He pierced all three coats tying the knots on the outside and closed the first suture line with external Lembert stitches.

The pressure of the elastic ligature soon caused the knot to slough into the intestine. A possible objection to the elastic ligature, that when tied and stretched it might not completely fill the needle puncture, McGraw claimed to obviate by passing the stitch, as described, on the stretch. By some surgeons twine has been used as a substitute for the elastic ligature. In the *British Medical Journal* of 1903 is an exhaustive article on the subject of the best general means for intra-abdominal anastomoses. Here Wollfler's method of suture is advocated. This consists of one continuous line of stitches through the mucosa reinforced by a sero-muscular suture.

In addition to mechanical and suture means for intestinal union, a number of ingenious methods have been brought forward in the last four years. In 1902, Harrington suggested the segmented rings. The adjacent edges of intestine are approximated by purse string sutures over the ring which is held in convenient position by a specially constructed handle while anastomosis is completed by means of a Cushing's continuous stitch. The handle is then removed and the opening closed. The advantages claimed for the Harrington rings are: the weak spot at the mesenteric border is avoided by a mattress stitch; the lumen of the ring is sufficiently large; the ring can be broken by light pressure after the suture is complete if so desired.

Several intestinal forceps have been devised; one by O'Hara of Philadelphia. Each end of intestine is clamped and trimmed close to the forceps which are then approximated and the gut united over the forceps by means of a Halstead suture. The forceps are then withdrawn and the closure completed. These methods have not been generally accepted with satisfaction.

Jaboulay has recently suggested a modification of the Murphy button by which he claims the following advantage — introduction through a small opening and no necessity for suture. The objections to Jaboulay's method are laceration of the intestine and liability of retention.

THE APPLICATION OF THE VARIOUS METHODS FOR INTESTINAL ANASTOMOSIS.

First, in end to end cases. End to end anastomosis is confined almost entirely to the small intestine and it is here we have the best conditions for operation. The wall of the small intestine is thicker, its blood supply greater and its contents less liable to infect the field of operation than in the large intestine. The Murphy button is especially satisfactory in these cases. It fits well, holds well, and the contents of the small intestine are of such character as would readily pass through its lumen. Conditions of the small intestine requiring resection frequently results from strangulated herniæ and the writer has occasionally been embarrassed at finding it necessary to considerably enlarge the hernial ring after a button anastomosis, a condition quite likely to exist in small femoral herniæ.

In end to end anastomoses of small intestine with large, the button has been used repeatedly, but with less satisfactory results and it would seem that the suture in these cases is the best means of anastomosis. Partial suture of the large intestine in these instances can be avoided by cutting the small intestine obliquely to fit more accurately the diameter of the large. In cases requiring this form of anastomosis, ligation of the large intestine and union by an end to side anastomosis might be indicated.

End to side anastomoses undoubtedly afford less favorable conditions to the Murphy button than end to end, yet the same fact applies to the suture. In end to end anastomoses of small intestine the button has rendered satisfaction, but in anastomoses of the end of the small intestine with the side of the large, sentiment favors the suture.

In lateral anastomoses of the large intestine, the suture is the popular means of union. Sentiment against the Murphy button in these cases is general, yet the writer in looking over the literature on the subject has found very few unfavorable results from lateral anastomoses of the large intestine by means of the button, reported, while there are numerous records of successful cases. The button undoubtedly is more likely to be retained in the large intestine than in the small, and union from the anatomical condi-

tion of the gut is not as satisfactory. The character of the contents of the large intestine is a factor in these cases. The lumen is more readily filled and the presence of fæcal matter in a solid state between the point of union and the stomach may cause obstructive symptoms. A sizable lumen in lateral anastomoses of the large intestine is more important than in the small, a condition more readily obtained by the suture than by the button.

The objection to suture method in these cases is the time necessary to complete the operation. When resection is indicated there are three suture lines. Doyer's method of ligating the intestinal ends by a purse string suture after crushing the walls with a specially constructed heavy clamp has been suggested as a means of obviating the two lines of suture, necessary otherwise, in the cut intestinal ends.

GASTRO-INTESTINAL ANASTOMOSES.

In gastro-intestinal anastomoses, the Murphy button has been extensively used and generally with good results, although there are more instances of its retention in the stomach than in any part of the gastro-intestinal tract, proportionately. It would seem as if this liability might in future to a certain extent be lessened. It has been shown that anastomosis with the anterior wall of the stomach affords a condition more favorable to retention of the button than anastomosis with the posterior. Anastomosis of the stomach with the duodenum is more desirable than that of anastomosis with any other portion of the small intestine, because of the anatomical position of the gut and on account of more satisfactory peristalsis.

Murphy reports one hundred and ninety-three cases of gastro-enterostomy with sixty-five deaths. A mortality of thirty-three and two-tenths per cent. Gelpe reports sixteen pylorectomies by means of the button with four deaths. The Murphy button was used in twenty-six gastro-enterostomies with five deaths.

Mayo reports seventy-two gastro-enterostomies in benign cases with six deaths, eighty-five gastro-enterostomies in malignant diseases with fifteen deaths. In all of these cases the Murphy button was used.

As regards the suture methods for the same purpose, the figures are not far different. The writer estimates from statistics reviewed, a mortality of from fifteen to twenty per cent., although Mayo Robson reports one hundred and three cases of posterior gastro-enterostomy, in which he used decalcified bone bobbin, with a mortality of three and eight-tenths per cent.!

ANASTOMOSES BETWEEN THE GALL BLADDER AND THE SMALL INTESTINE.

In these cases the use of the button has been specially advocated from the first, and here it is still undoubtedly the most satisfactory method of anastomosis.

In connection with this paper the writer has a few cases to report. He has used the Murphy button eight times. In five of these cases resection was necessary for gangrenous gut in femoral herniæ. The intestine resected was in all cases the small intestine and from three to six inches the amount removed. In two instances it was necessary, in order to replace the button after anastomosis had been completed, to incise the hernial ring. This was in both instances sutured with kangaroo tendon and gave no subsequent trouble. The buttons in all of these cases passed on the twentieth to the twenty-second day and the patients made perfect recoveries. In none of these cases was any suture used to reinforce the button, a feature of the operation which the writer considers of the utmost importance. Three other cases in which the button was employed, are reported more in detail, on account of special interest.

Case 1 — Mrs. L., 26. Entered Hospital August 29, 1905.

Menstrual history normal. Patient has had three children, the youngest nine weeks old. Since the birth of the last child, she has suffered from considerable pain in the left iliac region, with some constitutional symptoms. No vomiting until the day before admission. Her bowels were regularly constipated. Fæces have been small. On examination a tumor mass could be plainly felt to the left of the uterus. Diagnosis was in doubt, but a pelvic abscess was suspected.

Operation.—A median incision revealed a tumor the size of a large orange, matted firmly to the left wall of the pelvis and to the uterus. It was freed and lifted into the wound with great diffi-

culty. Here on more careful inspection this tumor was found to involve a coil of small intestine. This was excised between clamps and the intestinal ends united axially by a Murphy button. A suppurating wound complicated the patient's recovery. The button was passed on the twenty-first day. She was discharged with her abdominal wound healed on the thirtieth day.

Further careful examination of the intestinal tumor removed, showed the lumen of the gut to be largely obliterated. A lead pencil would not pass through the most constricted portion.

Microscopic examination proved this growth to be sarcomatous. This patient died within three months of her discharge from the hospital.

Case 2 — Mrs. Mc., 45 years — Entered hospital September 13, 1904. Patient has had four children, the youngest 14. Thirteen years ago she first noticed evidence of rupture at the umbilicus. This has slowly increased in size until the present time. It has been irreducible for the past five weeks. With the exception of habitual constipation, the patient has had no symptoms until her present attack three days ago. For the past three days she has had nausea and vomiting, both increasing. There has been pain about the hernia and constipation. Temperature 99, pulse 90, of good quality. The patient weighs about three hundred pounds. Examination shows a nearly round umbilical hernia about fourteen inches in diameter. The tumor is distended and tympanic.

Operation September 14th. A median incision was made to the left of the umbilicus and the hernial sack exposed. It contained some cloudy fluid and a mass of gangrenous small intestine. It was a simple matter to draw healthy intestine through the ring. The gangrenous mass was then excised between double ligatures, an end to end union effected by means of a Murphy button and the mesenteric edges sutured. The ring was closed and a small intra-peritoneal drain left in.

The gangrenous gut removed, measured eight feet without stretching.

The patient made an uninterrupted recovery. The button was passed on the thirtieth day and the patient left the hospital two

weeks later in fair general condition with her wound healed and no evidence of weakness in the scar.

Case 3 — C. H., 44, bartender — Entered the Hospital August 11, 1905. The patient was well until about eight months ago, when he first began to notice epigastric distress followed by nausea. This condition increased steadily until two months ago, when he vomited for the first time. During the past two months he has vomited in all about six times. His gastric distress after eating has been noticeable.

Examination of the stomach by Dr. Gompertz revealed no free hydrochloric acid. Lactic acid was present as were Boas-Oppler bacilli. The patient has lost about 25 pounds in the past year.

Examination showed an abdomen soft and easily examined, except in the epigastrium, where there was considerable tenderness and muscular resistance. There was an indistinct sensation of an epigastric tumor. The diagnosis of carcinoma of the stomach was made.

August 3d, operation.

An incision five inches long was made between the ensiform cartilage and the umbilicus, in the median line. The stomach was readily palpated and a pyloric tumor, about the size of an egg, detected. This was loosely covered by adherent mesentery. There was no general enlargement of the mesenteric glands, although a few glands in the immediate vicinity of the growth seemed affected. These were removed. The tumor of the stomach was isolated and drawn forward into the wound. Clamps were applied on the duodenal end of the tumor and also on the stomach, beyond the tumor. The growth was then excised. The incised end of the stomach was then sutured; the mucous membrane with continuous catgut, the sub mucosa and peritoneal surface with interrupted silk, Lembert sutures. The end of the duodenum was then closed completely in a similar manner.

The posterior surface of the stomach and the adjacent surface of the duodenum were incised to admit a Murphy button and the anastomosis was completed.

A small omental flap was sutured over the parts anastomosed. The wound was closed completely.

The patient made an uninterrupted recovery. The temperature at no time was above 99, the pulse at no time above 90. Small quantities of water were administered by mouth 12 hours after the operation. The patient received saline injections. Soft food in small quantities was allowed on the seventh day. The button passed on the eighteenth day. The patient walked out of the hospital on the twenty-sixth day.

At the present time, ten months after the operation, the patient is well. He has gained about twenty-five pounds in weight and has not suffered from digestive disturbance.

CONCLUSION.

It has seemed to the writer, in reviewing the literature on the subject of intestinal anastomosis, that the mistake has been made of advancing a particular method as the best for general use. At the present time, both the Murphy button and the suture have their advantages and disadvantages, both their limitations.

The Murphy button is unquestionably the simplest method of effecting anastomosis in most cases, in the hands of the majority of surgeons. It is certainly the quickest. Axial anastomosis of the small intestine, cholecyst-enterostomy and many cases of gastro-enterostomy afford special indications for the Murphy button and here it can be advocated.

In anastomoses of the large intestine, particularly when complicated by malignant growths where cachexia has impaired vitality, the suture should be regularly used. Sentiment at present favors one of the varieties of continuous sutures.

In preparing this paper, reports on about twenty-two hundred cases of intestinal anastomosis have been examined, including the sixteen hundred and twenty cases collected by Murphy. The writer has been thoroughly impressed with the difficulty of drawing very satisfactory conclusions from these statistics. It is evident that cases where results have been unfortunate, have not been reported, a fact that may account for the opposition to the button method as being out of proportion to the results from recorded cases. When it is taken into consideration that the Murphy button has been regularly advocated in operations requiring great haste, that the suture has been undoubtedly used in more favorable

cases, that the mortality in the two methods, even under these circumstances differs but little, it would seem that the Murphy button should be regarded today as one of the valuable practical discoveries of the age.

The writer wishes to acknowledge the assistance of Dr. F. B. Standish in the preparation of this paper.

DISCUSSION.

Dr. William H. Carmalt (New Haven): Mr. President, I am disappointed that Dr. Sullivan is not here. I have but little to say in regard to the subject, for Dr. Sanford's paper goes over the matter so completely that it is hardly worth while to take the time of the society in attempting to add to it.

There are, however, two or three points I might refer to. In his paper he says that an end-to-end anastomosis is only adapted to the small intestine. You might say it is preferably adapted to the small intestine, but to say it is *only* adapted to the small intestine is too broad. It depends on the condition of the two parts of the intestinal tract that you are operating upon. Some fifteen years ago I operated upon a case of cancer of the cæcum, in which the lumen of the intestine had been very much narrowed, and I found, on cutting into the abdomen to remove the diseased mass, that the large intestine was atrophied from disuse, and contracted to a small size. The small intestine was hypertrophied to a very considerable amount, so when I brought the ends together they were practically of the same size, and there was no difficulty at all in making a union. I made that union with the suture method. I think the question of time as being a reason for selecting the Murphy button in preference to a suture, depends very much upon the skill of the individual operator. Certainly a foreign body in the intestines is objectionable in itself. I do not deny that in the hands of many, perhaps you might say the majority of surgeons who are not operating like the Mayos, daily, or several times a day, the Murphy button can be put in quicker than an anastomosis by suture; at the same time, the anastomosis by suture can be done very quickly in skilled hands. I must, however, say my preference for speed and accuracy of application is still in favor of the McGraw ligature. I am in favor of that by reason of the facility with which it can be done. The McGraw ligature, you know, is an elastic cord, and I want to insist upon one's using the cord, and not attempting to do the operation with a tube: it must be the solid cord that is to be used, which you can stretch to a very considerable extent, so small that it will draw through, as McGraw says (it is not worth while to go over the technique of the operation again, as it has been described by Dr. Sanford), but, with a round needle, which perforates the intestine or the stomach, as the case may be, it crowds the

fibers of the cut apart. It doesn't cut, but it crowds them apart, and when the ligature is drawn through tight, it makes a small opening. When the ligature is relaxed it fills the opening entirely and there is no leakage. Then it is tied together, the knot again tied with a piece of silk in order to secure against slipping, and finally the ends drawn in and a Lembert suture put on outside. You make no opening into the intestine at all except what you fill up with the ligature, and there is no chance of leakage. The only objection to it is in cases where we cannot wait for an opening to slough through. It is particularly adaptable to cases of gastro-enterostomy, performed for carcinoma of the stomach, associated with stenosis, when the radical operation is inadmissible.

Dr. Oliver C. Smith (Hartford): Just one word. The end-to-end anastomosis, we should remember, should be done (as was brought out in Dr. Sanford's paper), in chronic conditions, not in acute conditions. An end-to-end anastomosis is not performed in acute conditions, for in order to stand the tension and strain, you want a larger caliber which a lateral anastomosis will give. Therefore, we require a lateral anastomosis in acute conditions, and an end-to-end in chronic conditions. In cases of hernia, as Dr. Sanford states, it seems to me the second incision is better, doing the anastomosis first, the hernia can be done afterwards. You have more room and can draw up the intestine. You can put down a drainage tube, but it is not wise to put gauze down to the suture point. If you put gauze down to the suture point it absorbs the plastic lymph and invites leakage, the very thing you don't want.

Dr. Leonard W. Bacon (New Haven): Mr. President. With regard to the elastic suture in gastro-enterostomy, it seems to me it fills one important particular. The tendency in gastro-enterostomy, especially where the pylorus is patent (the authority quoted by Dr. Brown to the contrary, nevertheless), the tendency in those cases, I say, is for the anastomotic opening to become insufficient. This was brought out, I remember, by Dr. Moynihan when he was discussing this subject in Washington, that it was a matter of considerable importance, where it was possible, in these cases of gastro-enterostomy, to remove a portion of the gastric wall (which is around the margin of your anastomosis), in order to cut away a certain amount of the superabundant mucosa, and also the whole thickness of the gastric wall. You cannot cut away much of the intestinal wall, because there is not enough of it, but you can cut away quite a generous amount of the gastric wall, and I think that helps very decidedly in a gastro-enterostomy. But the anastomotic opening through a linear incision, which is caused by pressure from one of these devices, either with twine or with a rubber ligature to get a symmetrical incision from one organ to another, I don't think is adequate.

Another point in Dr. Sanford's paper which was brought out very distinctly by Dr. Lee in his paper, is that the only gastric surgery which amounted to very much was within the last five years. I strongly sus-

pect the statistics Dr. Sanford has gathered with regard to the relative advantages of anastomosis (and particularly gastro-enterostomy, and anastomosis by suture and anastomosis by mechanical appliances), do not apply to the last five years.

Dr. D. Chester Brown (Danbury): There seems to be a great discrepancy in the statistics reported in the use of the Murphy button. Personally I don't like it. I find a great difference in the strength and the spring of the Murphy button, as much difference as there is in the tensile strength of any elastic. If you take time to test a number of Murphy buttons as to their power of compression, test the same button that you have had in your instrument case for a number of weeks, or months, or years, you will find that the individual button varies in the amount of pressure. It seems to me here is a fact we have not appreciated in the results we get from the button.

Tuberculous Peritonitis.

JOHN B. BOUCHER, M.D., Hartford.

Tuberculous peritonitis is dependent upon an infection by means of the bacilli circulating in the blood, or upon an extension of tuberculous inflammation, or ulceration from adjacent organs.

All agree that the tubercle bacilli are the invariable cause of the disease, but the source of invasion admits of more and various opinions; the route by which they reach the peritoneum is frequently difficult or impossible to determine, but is evidently by many different sources. Dieulafoy believes that the most frequent source is through the intestines where the bacilli have been introduced by sputum or food, infected milk or meat. Clinically, I do not believe that we can eliminate bovine tuberculosis as a source of infection in man. The work of Salmon, Ernst, and a host of other accurate observers, has shown the possibility of infection through the milk and food supply. The structure of the large follicles of the intestines and of Peyer's patches corresponds closely to the follicles of the tonsils. We know that next to the lungs, the most susceptible localities to tuberculous invasion are the tonsils, where the lymphatic tissue lies directly exposed on the mucous surface; in the intestines and appendix, practically the same condition exists. The bacilli may attack the intestines primarily and the peritoneum next, or being absorbed by the superficial lymphatics of these structures, may attack the peritoneum first; this hypothesis is confirmed by the experience of Wesner and Cornil. Unquestionably the bacilli are capable of passing through the walls of the intestines without a primary lesion of the bowel and thus reaching the peritoneum without leaving any trace of trouble at the atrium of invasion, as it so often does in the pharynx when the cervical glands become infected. Primary tuberculosis of the intestines occurs in three forms: (1) Multiple ulcers due to inoculation from sputum; (2) single ulcera-

tion, especially in the ilium, which has a marked tendency to heal with stricture formation; such cases are usually seen with obstruction; (3) conglomerate tuberculosis, usually at the ilio-cæcal junction, giving rise to a tumor and having the gross appearance of carcinoma; the last two forms are usually primary and are due to accidental inoculation. We can best study inoculation tuberculosis in the surface infections, such as the finger of the demonstrator of anatomy, or the infection so often occurring in students in the dissecting room; here regional lymphatic invasion usually occurs with a tendency to remain local; the tubercle bacilli may be demonstrated in the glandular involvement.

We will now consider a most fruitful source of tuberculous peritonitis, and it is not impossible that this is the most frequent source of infection, namely: through the Fallopian tubes in women. Abdominal surgeons have taught us that the disease occurs more commonly in females than males, owing to the fact that the Fallopian tubes are a favorite seat for primary tuberculous infection. They seem to have a special affinity for the tubercle bacilli, in this respect, nearly resembling the alveoli of the lungs. The Mayos found localized tuberculosis of the intestines about equal in males and females, while they found tuberculous peritonitis four times as frequent in women. In the last sixteen cases reported, they found eleven in women, in nine of whom the origin of infection was in tuberculous tubes; one in the appendix, one unlocated; five were in men, three with tuberculosis of the appendix and cæcum, two unlocated. In this series of cases over fifty-six per cent. were produced by tuberculous tubes. As Hegar pointed out some years ago, the tubes are predisposed to tuberculosis by their spiral form and pleated mucosa which favors stagnation of secretion. A preliminary catarrh seems to enhance the danger of infection, the sources of invasion of the latter being numerous, such as ascending infection, either through the blood or lymph vessels. It is possible that tubercle bacilli, finding their way to the peritoneal cavity from any source, at once attack this favorable soil. Pinner's experiments show that fine particles of lampblack introduced into the abdominal cavity, find their way through the tubes into the uterus, likewise that tubercle bacilli are capable of migrating through the walls of

the Fallopian tube as well as through or from its fimbriated ends. The normal constriction and valves of the tubes, about five-eighths of an inch from the uterus, favor the arrest of the bacilli at this point. Clinically, this is the most frequent area involved, and the pathological changes indicate that the primary focus is in the tubes. It is also at this point that the gonococcus infection is arrested and retained sufficiently long to destroy the mucosa and produce the stricture, which is the most prominent etiological factor of gonorrheal pyosalpinx. In the male we have a migration from the seminal vesicles, the epididymis, the vessels of the spermatic plexus, through the ampullar ends of the vas deferans and the lymph vessels of the latter.

It must be borne in mind that we may have extensive disease of the peritoneum without involvement of the tubes. Other sources are the blood current, the lymph current, especially from the mesenteric glands, the pleura and genito-urinary tract. As a rule, it may be stated that the most common source of infection in males is: first, the intestinal tract; next, the genito-urinary tract: and in females, the genital tract, especially the tubes.

Any previous condition which tends to weaken the resistance of the peritoneum, will act as a predisposing cause; for example, acute peritonitis, pelvic hemocele, enteric fever, and especially the puerperium. Kelly believes that the influence of parturition has not been sufficiently recognized. In this connection we must also keep in mind the fact that, as a rule, it requires either an inherited or acquired tendency to the disease.

The peritoneum is greatly exposed to the danger of tuberculous infection. Tuberculosis, as a rule, attacks this membrane in one of two types, in the one, it is accompanied by a widespread formation of free connective tissue with multiple adhesions between the various viscera; in the other, it is associated with profuse exudative processes. Very frequently the disease starts with the perforation of a caseous mesenteric or retroperitoneal gland. The process becoming diffused by means of the peristaltic activity of the intestines or localized if adhesions have previously been formed.

In the same fashion tuberculous ulceration of the intestines may give rise to disease of the peritoneum, especially the slowly per-

forating type of ulcers. In case of sudden perforation, a rapidly fatal peritonitis is set up by the pathogenic micro-organisms which escape into the peritoneal cavity.

Genital tuberculosis, especially in women, is very frequently the point of departure for a peritoneal tuberculosis. The bacilli are especially apt to find their way out of foci situated in the distal extremity of the tubes, unless the peritoneum has been previously walled off by the formation of a false membrane. The organisms find their way either through a free opening or through the lymph spaces in the mucous membrane, notwithstanding the opposing action of the ciliated epithelium of the tubes.

The tuberculous process may be transmitted from one serous membrane to another, for example, from the pleura to the pericardium and the peritoneum or vice versa.

In the case of rupture of a tuberculous foci into the blood stream, the serous membrane may participate in the general disease with the formation of multiple miliary tubercles.

Age is an important factor. During the period from fifteen to forty, corresponding with the menstrual activity in women, it is most frequent, although it is not uncommon in children under ten years of age. After the age of menstrual activity, it rapidly decreases in frequency. In America, negroes are more prone to the disease than white people. The symptoms vary considerably in certain special features from other forms of peritonitis. It presents a symptom complex of extraordinary diversity.

The process may be latent and not cause a single symptom. Such cases are met with accidentally in operating for other conditions. In other cases the onset is so sudden and the symptoms so pronounced that erroneous diagnosis of enteritis, or strangulated hernia, may be made. Instances are recorded where the operation for strangulated hernia has been performed. Many cases are ushered in with the symptoms of acute peritonitis and abdominal tenderness. Other cases resemble typhoid fever very closely and may lead to error in diagnosis; ascites is frequent but the effusion is rarely large and may sometimes be hemorrhagic. In this form the disease must be differentiated from acute miliary cancer, cirrhosis of the liver

and chronic simple peritonitis. It must not be forgotten that tuberculous peritonitis may be secondary to cirrhosis of liver in a considerable percentage of cases. Tympanites may be present in very acute cases when it is due to loss of tone in the intestines, owing to inflammatory infiltration, or it may occur in old long standing cases where universal adhesion has taken place between the parietal and visceral layers. Fever is a marked symptom; in acute cases, the temperature reacting 103° or 104° F. In the more chronic cases sub-normal temperature is common and for days it may not arise above 97° F., the morning record may even be as low as 95.5° F. Occasionally pigmentation of the skin is present and has in some cases led to error in confusion with diagnosis of Addison's disease. (Osler.)

A striking peculiarity of tuberculous peritonitis is the frequency with which either the condition simulates or is associated with tumor, and these may be:

(a) Omental, due to puckering and rolling of this membrane until it forms an elongated firm mass attached to the transverse colon and lying across the upper part of the abdomen. This cord-like structure may be also found with cancerous peritonitis, but is much more common in tuberculosis. A resonant percussion note may sometimes be elicited above the mass. Though the tumor is usually situated at the umbilicus, it may be present in the right iliac region.

(b) Sacculated exudation in which the effusion is limited and confined by adhesions between the coils, the parietal peritoneum, mesentery, abdominal or pelvic organs. The encysted exudate is most common in the middle zone and has frequently been mistaken for ovarian tumor. It may lie, however, completely within the pelvis, associated with tuberculous diseases of the foreign Fallopian tubes.

(c) In rare cases the tumor formation may be due to great retraction or thickening of the intestinal coils. The small intestine is found shortened, the walls enormously thickened and the entire coil may form a firm knot, close to the spine, giving on examination the idea of a solid mass. Even the entire bowel, from the duodenum to the rectum, has been found forming such a hard nodular tumor.

A case has recently occurred in the writer's experience in which it was found that the entire intestinal tract was contracted to a fibrous cord in which the lumen of the bowel would scarcely admit a small lead pencil, the walls being greatly thickened.

The diagnosis of these peritoneal tumors is sometimes very difficult. The omental mass is a less frequent source of error than any other, but a similar condition may occur in cancer. The most important problem is the differential diagnosis of saccular exudation from ovarian tumor. In fully one-third of the recorded cases of laparotomy in tuberculous peritonitis, the diagnosis of cystic ovarian disease has been made. The most suggestive points for consideration are the history of the patient and the evidence of an old tuberculous lesion. The physical condition is not of much importance, as in many instances the patients have been robust and well nourished. In the diagnosis, the association of tuberculous conditions in the other organs should be carefully considered.

The surgical treatment of tuberculosis of the peritoneum involves the following propositions:

(1) To remove or shut off the source of supply to the peritoneum of new tubercular débris.

(2) To remove the products of the infective process from the peritoneum.

(3) To remove the tissue proliferation for the encapsulation of the foci already present, and

(4) To avoid mixed infection. (Murphy.)

Too early intervention is unwise since the tuberculous process may be still in a period of evolution. The tendency of surgeons at the present time is to operate after the pain and discomfort from the ascites and adhesions have become so marked that relief is imperative. The first surgical work for tuberculous peritonitis dates back in 1862, when Spencer Wells performed a laparotomy for supposed ovarian cyst and found, to his astonishment, that the patient was cured. Laparotomy was advised as a therapeutic measure by König in 1884. During the next fifteen years simple laparotomy, with evacuation of fluid and closure of the wound, gave a large percentage of recoveries, various surgeons reporting from fifty to seventy-five per cent. of cures from simple laparotomy. Various theories

have been advanced as to how the process of recovery is brought about. Veit claims that by evacuating the effused fluid suddenly and completely, a new effusion of normal serum occurs immediately, which is possessed of bactericidal power in the highest degree, hence the struggle against the microbes will be apt to be successful; if, however, fresh bacilli continue to penetrate into the peritoneum, or a tuberculous focus elsewhere in the body, partly neutralizes this antitoxic power of the serum, healing cannot result. In contradistinction to this theory, Murphy believes that effusion of new serum, following laparotomy does not possess antitoxic properties which destroy the bacilli, on the contrary it possesses equal or greater toxicity than the original serum; the curative properties are brought about by inflammatory reaction, and the most active cell proliferation; it is this tissue proliferation which overwhelms and encapsulates the tuberculous foci on the surface of the peritoneum.

Personally, I believe that simple laparotomy with removal of the fluid, acts in two ways: first, that in tubal disease the fluid mechanically separates the fimbriated extremity of the tubes from the surrounding tissue; second, after removal of the fluid, contact with neighboring structures with resultant adhesions may follow; this prevents peritoneal reinfection and confines the product to the pelvis. It also accounts for the lateral pelvic masses, which are sometimes developed after the disappearance of the fluid. It likewise enables nature to bring her resources to bear on a localized focus and develops the self cure that has been noted in so many cases. The operative manipulation causes the serum to be poured out and thereby increases the peritoneal power of absorption. (Mayo.)

To Murphy and the Mayos belongs the credit of demonstrating that in a large percentage of cases of tuberculous peritonitis with ascites, the foci of infection is in the Fallopian tubes and appendix. Acting upon the knowledge thus acquired, they have in their later cases removed the tuberculous tubes and appendix when so found, with the result that they have cured a large percentage of cases that were formerly only temporarily benefited by simple laparotomy. Mayo says. "Of the twenty-six radical tubal operations, we have performed on cases of tuberculous peritonitis, twenty-five recovered; of these, seven had been operated upon by simple laparotomy from

one to four times previously. In not a single instance as yet has another operation become necessary, and as contrasted clinically with the preceding group of equal numbers, the favorable results are most striking. There is usually a temporary continuance of the peritoneal effusion, but reinfection has not occurred." The outcome where the appendix has been the seat of the trouble, has been favorable but not so brilliant as in the tubal form of the disease.

The percentage of recoveries in tuberculous peritonitis from operative measures must depend largely upon our classification of cases. The surgery of the decimated serous variety, which in the great majority of cases is associated with, or due to tuberculosis of the tubes, gives us the most brilliant results, while in the dry and ulcerative forms of the disease, it is followed by high mortality and little is accomplished by surgery. In the inflammatory, localized, suppurative form, the operative outcome is quite favorable, while in the suppurative, multilocular, cystic variety, but a few recover.

A word in regard to the technique of operation. Under thorough antiseptic precautions, the fluid is evacuated and the general abdominal cavity is packed off in the usual manner. The pelvic organs, appendix and cæcum, are examined. If the Fallopian tubes, appendix and cæcum are diseased, they are removed, the stumps and walls of tuberculous abscess cavities are dried and a little iodoform rubbed in, and the abdomen closed. In extensive tuberculosis of the bowels with widespread adhesions, resection is a hazardous procedure and is usually a futile undertaking and is often followed by fæcal fistula when the patient survives the operation. In such cases the infected area should be excluded from the fæcal current by short circuiting the intestines. The tuberculous process in the excluded portion ceases to advance and often heals, the patient's life may be prolonged and he may be relieved of most of his disagreeable symptoms.

From the facts already stated, I think we are justified in believing that failure of simple laparotomy, in tuberculous peritonitis, with evacuation of the fluid exudate, to maintain its proper standing in surgery, is due to reinfection from lesions in the mucous membrane of the organs enumerated. We have been treating a symptom

instead of removing a source of disease. It is true that at times the lesion cannot be discovered, but it is equally true that a radical operation on the primary lesion in tuberculous peritonitis will greatly increase the percentage of cures and prevent reinfection of the peritoneum.

In conclusion we are forced to believe that tuberculous peritonitis, like septic peritonitis, has its origin in a local focus in nearly every case. Peritoneal reinfection may be prevented if we are successful in removing the local focus. Whether the patient will remain cured must depend upon whether the local focus thus removed is primary or secondary; if primary, we can hope for good results, but if secondary, it must depend upon the possibility of a cure of the primary seat of the disease.

DISCUSSION.

Dr. Leonard W. Bacon, Jr., (New Haven): Mr. President and Gentlemen. A single word with regard to some former remarks of Dr. Boucher in commenting on the paper of Dr. Lee. He wanted to lay special stress, when he was discussing gastric surgery, on the importance of diagnosis. And I had under my charge a year or two ago, a case of tuberculous peritonitis that presented very evidently one symptom which may be of service in making a diagnosis.

This was a case of that type of tuberculous peritonitis which is not very uncommon, where there is a general exudate, and before it was possible to make the diagnosis otherwise, I and Dr. Foote of this city, who was kind enough to help me in consultation, noticed very distinctly a friction under the hand as it was held upon the epigastrium, analogous to the sensation you get in a case of pleurisy. I don't know that anywhere attention has been called to that. I did not myself know how to appreciate it, or how to interpret it at the time. A week or so later it became evident what the nature of the disease was, and I noted particularly at that time that this was a condition and a symptom that might serve perhaps as a differential diagnosis to discriminate between different types of this peritoneal trouble.

The most of the types of tuberculous peritonitis which Dr. Boucher has alluded to, I have seen, but I am inclined to take issue with him as to the relative frequency of it in the pelvic region, being due to the Fallopian tubes or to the appendix. In several cases I have seen, it has to all appearances been primarily in the region of the diaphragm and it has been accompanied with a serous exudate of the pleura, and, in one case, in both pleural cavities and in the pericardial sac also, a condition which German writers have described under the name of *pyelocystitis chronica*

fibrosa, and on which there was an article written about twelve years ago.

The simpler forms of tuberculous peritonitis will yield to simple laparotomy. It is very questionable to my mind if anything effective can be done in those cases where there is a general plastic exudate, and the whole intestines are matted together in one mass. I am very doubtful of the surgical advantage that can be gained from the breaking of these adhesions. It is only here and there that you can find collections of fluid that can readily be evacuated. The possible advantages that might be gained from radium, or the use of the X-ray, I think, are perhaps worthy of consideration, but only in cases of last resort that do not offer very much hope in other directions.

I had a case under my charge about a year ago, of a man whom I brought before the New Haven Medical Association and exhibited him as having a pancreatic cyst, a case where the physical signs of a pancreatic cyst were definite indeed, a distinct prominence, evidently cystic, appearing between the stomach and transverse colon, just to the left of the median line. The man was going to be put on the table with the idea that we were going to operate for a pancreatic cyst. As the man was being carried on his way there, when under ether the cyst broke. When we opened the abdominal cavity, we found a slight amount of free serous fluid in the peritoneal cavity, and you could pass your hand in behind the stomach and the left side, between the stomach and the spleen where the peritoneal fold had been ruptured. The man went along pretty fairly well, but in the course of about three weeks, considerable ascites began to develop. The sutures became loosened, and it was decided the only thing to do was to subject the man to a second laparotomy. I did that because the liver had become enlarged, and I thought that might be attended to in one of those operations, which aim at an anastomosis between the hepatic vessels and the vessels of the peritoneum. At the second laparotomy, the peritoneum was found to be bright red, quite as it would be in the forms of malignant peritonitis, and fully a quarter of an inch thick. That certainly gives some corroboration of the idea that there is a cellular exudation which goes on after the release of the tension by simple laparotomy.

Dr. Selden B. Overlock (Pomfret): I am very fortunate, in this discussion, in following Dr. Boucher's paper, and Dr. Bacon's discussion, both of which leave but little to say. Everyone, I think, has always been struck by the fact that those who have done very much abdominal surgery, have at some time in their life opened the abdominal cavity for a supposed tumor, and found tuberculous peritonitis. This fact shows that the diagnosis in the past of tuberculous peritonitis has had its difficulties. At the time tuberculin was exhibited, everyone thought this would be the means of making an exact and certain diagnosis, but in nearly every case the systemic reaction was such that there was a legitimate hesitation in

its use. I think that remains today. The systemic disturbance is so much that tuberculin really becomes an element of apparent danger. Outside of this one aid, it seems to me that the recognition of a focus, probably tuberculous, in other parts of the body is more confirmatory than any other one thing, besides, of course, the general characteristics of a tuberculous peritonitis. Three or four years ago you all remember there were several elaborate sets of statistics brought forward to prove that tuberculous peritonitis did just as well under medical as under surgical treatment. To-day, when we are removing the foci of infection, whether they are the tubes or the appendix, or whatever they may be, it seems to me the medical measures must be relegated to a second place in the treatment of tuberculous peritonitis.

Dr. John B. Boucher (Hartford): In closing I will say Dr. Edebohls of New York has demonstrated that a Plaque-like thickening of the abdominal parietes is demonstrated in a large percentage of cases, the sensation imparted to the fingers is like that of Urticarial wheals of various sizes. He also found enlargement of the spleen in one-half his cases. I tried to show that not only the tubes but other organs may be responsible for tubercule bacilli. We have tuberculous peritonitis four times as frequent in women as in men, and there must be a cause for it.



MEDICAL PAPERS

Arterio-Sclerosis, with Especial Reference to the Blood Pressure Changes in this Condition, and to the Use of the Sphygmometer for Determining the Pressure in Routine Practice.

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Not very much that is new can be said of the morbid anatomy, etiology, symptoms, or course of these arterial changes, as they are usually seen, but perhaps a few words in regard to these matters are in order. The real point of interest hangs on the blood pressure changes, on the manner of estimating these changes, and on their practical importance in daily practice.

Arterio-sclerosis consists of a degeneration of the media, with subsequently a compensating thickening of the intima.

This thickening of the intima is due to a development of connective tissue between the endothelium and underlying elastic tissue. Degenerative changes, with areas of necrosis, may form in this connective tissue, with subsequent deposit of lime salts, and the formation of calcareous plaques, which may be either quite localized, or the whole artery may become a tube of bony hardness.

Atrophy and degeneration of the muscle fibres of the middle coat occur, and are replaced by connective tissue, the larger arteries becoming weakened, and frequently dilating, while the thickening of the coats of the smaller arteries varies in degree, but may be sufficient to obliterate them entirely. The outer coat of the artery also undergoes fibrous changes, and becomes thickened.

It is interesting to mention the experimental production of arterio-sclerosis in rabbits, by the use of adrenalin, as shown recently by the observations of Pearce, with a most careful study of the histologic changes.

These sclerotic changes may be local, the so-called nodular form, or diffuse, and Osler and other writers make a division of

the senile form, in which there is extreme degeneration of the media, usually accompanied with atrophic changes in the kidneys and liver, an interesting point being the greater frequency with which some arteries are affected than others.

Babcock quotes the investigation of Thoma, showing that the ulnar and anterior tibial arteries are most often affected, the cerebral, internal carotid, and radial coming next, the brachial and external iliac the least frequently. Brooks, in a recent paper of great interest, shows how much more frequently than has been supposed, sclerotic changes in the smaller visceral vessels occur.

Localized or nodular sclerosis is found most often in those arteries which turn frequently in their course or give off many branches. Thoma has shown the abdominal aorta to be the most frequently affected.

Brooks classifies all cases as follows. First, those in which the larger vessels are involved, but not the smaller ones. Second, those cases in which smaller vessels are involved, but not the larger. Third, a class of cases in which the changes are only microscopic with the small visceral vessels especially involved. Doubtless in time, all these classes overlap each other.

Sclerosis of the veins also occurs, especially in the portal vein, in cases of cirrhosis of the liver, and at times in the pulmonary veins, in some forms of heart disease. We shall see farther on, that involvement of the splanchnic region is frequent, and perhaps the most important of all.

The anatomical and physiological integrity of every organ in the body depends directly on a normal supply of blood. It is at once obvious therefore, that with the development of those arterial changes, the organs, which they should supply, must suffer.

Practically, the heart, brain, liver, and kidneys are the organs more frequently and seriously affected. In the heart, with involvement of the coronary arteries, come myocardial and endocardial changes. These myocardial changes, especially of the fibroid type, have a more important relation to coronary sclerosis, which, as an etiological factor, must never be overlooked. Especially is this true, in the cases where the sclerosis has taken the coronaries first, or at least very early, without there being much evidence in the

peripheral vessels, of arterial change. Many a heart, failing in middle life, has this as the cause.

In the liver, atrophic changes occur, and the kidneys seem to be especially liable to sclerotic changes. The capsule becomes adherent, and the capillaries of the glomeruli are thickened or even obliterated.

Consider for a moment all the possible consequences of these arterial changes; the most important organs of the body seriously impaired, with ill health proportionate to the damage done, a premature old age with lessened vigor and accomplishment.

Remember, too, the great and increasing prevalence of this condition, with its slow but steady progress to the end, and the subject becomes, it seems to me, one of the most important with which we have to deal.

The French saying covers the whole situation — “Man is no younger than his arteries.”

These are the days of preventive medicine, but our studies in prevention should not be confined to the acute and contagious diseases only, if we can do something to prevent arterial changes, or slow them in their course, we are doing our best to preserve valuable lives.

With this in mind, I would ask your especial consideration to the causes of this condition.

Etiology. — It is well known that chronic poisoning by lead, by the gouty state, and probably by alcohol, although this is questioned by Cabot, induce arterio-sclerotic changes, more or less extensive. Just how this comes about, is not certain, but practically it seems to be true.

Syphilis is a very important cause, and some of the acute infectious diseases, especially typhoid fever, as shown by Thayer, seem to be often the starting of the process.

The tendency to early arterial changes is very marked in certain families. There is poor material in the machine, as Osler says, and slight causes seem sufficient to start the process. Fraenkel also makes a point of this family tendency.

The arterial changes of old age are, of course, well known, and expected. It is interesting and marked to find an old person

with soft arteries. Perhaps they are old, because in spite of all the possible causes, their arterial system has somehow escaped damage. Have we not come to assume that an old man must have hard arteries, without even trying to discover just why. Perhaps the best explanation is Romberg's; that the system has for so many years been forced to overcome certain conditions of blood pressure, the result being a very general state of arterio-sclerosis.

The influence of occupation is very interesting. I have no statistics to show that farmers very frequently show early arterial changes, but I believe it is true, in spite of the many favorable conditions in which we live. Workers in any line, however, where continued physical exertion is required, are very apt to show arterial changes earlier in life than would be expected, the point being, that repeated muscular contractions increase the peripheral resistance, raise the blood pressure, and so call on both heart and arteries for additional work.

In the same line, comes the interesting suggestion of Romberg, that neurasthenics may show early arterio-sclerosis, because of the constantly changing blood pressure, due to the unstable state of the vaso-motor apparatus.

A state of hypertension, therefore, whether general or local, whether the result of muscular strain, of nervous conditions, of diseases, acute or chronic, or whether merely the peculiarity of the individual, predispose strongly to actual arterial changes.

Just how far the state of the blood itself may act as an exciting cause of arterial changes, is not clear, but it is probable that the excessive use of nitrogenous food, by causing a large amount of nitrogenous waste products in the blood, raises the arterial tension, and leads to degenerative changes in the intima. Also in such blood conditions the nutriment supplied to the arterial coats, by the vasa vasorum, is poor and diminished in quantity, and the vessels must suffer in this way. Barr makes a point of this, and probably with reason.

Stengel is undoubtedly right in saying that arterio-sclerosis is not a merely passive process of hardening of the vessels, but really represents a general disturbance of the whole organism, its progress being marked by stages, more or less definite and easily recognized.

Finally, an etiological factor of great importance, is certainly the strenuous life, as it goes nowadays. Obviously, some men bear it, and keep soft arteries, and live out their time, but do the majority? Most certainly, many do not.

Marchand regards arterio-sclerosis as a nutritional affection of the vessel wall, resulting from wear and tear.

Symptoms.—A very brief consideration of the symptoms will be sufficient for the purpose of this paper.

A palpable thickening of the arteries, with hypertrophy of the left ventricle, and a sharp aortic second sound, are the obvious symptoms of this condition. If the process is limited, no other symptoms may result, at least for a time, but soon the organ supplied by these arteries will show disturbed functions.

If the coronary arteries are involved, the heart will show disturbed action. Hypertrophy follows then with advancing myocardial change, especially of the fibroid type, dilation occurs, with the various signs of a weak and incapable heart.

If the arteries of the brain are especially involved, cerebral symptoms of various kinds and degrees will follow. I believe vertigo to be an important and often an early symptom. Hemiplegia and aphasia, more or less permanent, may be seen, with the many possible degenerative changes, due to disturbed blood supply, and therefore poor nutrition. The kidneys and the liver must suffer, first functionally, but soon organic changes will be found.

The patient may be conscious of various disturbances of circulation, due to the arterial changes. Cabot states that arterio-sclerosis may be the cause of a progressive emaciation, the changes in the circulation disturbing the processes of nutrition.

In the minds of all of us, arterio-sclerosis is at once and practically always associated with hypertrophy of the left ventricle, an accentuated aortic second sound, high blood pressure, and usually, though not always, chronic interstitial nephritis.

As a practical symptom of arterio-sclerosis, and its accompanying changes, a high blood pressure, as estimated by the modern sphygmometer, is of special interest.

The history of the practical use of blood pressure readings may be briefly stated as beginning with Von Basch in 1881, who devised

and used an instrument for determining the systolic pressure which was fairly accurate. Pressure was exerted on an artery until no further pulsation could be felt beyond the point of compression, the pressure used being read from a monometer.

Since then, many observers, whose names I will not even try to mention, have worked in this line, and many instruments have been devised. At present it seems sufficient to say that the sphygmometer of Erlanger, of Johns Hopkins, is the most complete and accurate, while that of Dr. Theodore Janeway of New York is the simplest, the most easily applied, and the most practical for daily use. Dr. W. B. Standish of Philadelphia has devised a useful instrument, and there are, of course, many others.

These instruments all consist, essentially, of three parts — an inflatable armlet to be put about the arm above the elbow, a bulb to force air into the armlet, and a column of mercury and scale to register the pressure required to shut off the pulse as felt in the radial artery. One important difference between the older and more recent instruments, is in the width of the armlet, the older measuring 5 cm., the more recent 12 cm. The reading given by the narrow armlet is higher than by the wider one, but the wider one is more easily applied and is more accurate for general use. It is to be hoped that all observers will agree on a standard size.

In the meantime, in reporting results, the width of the armlet should always be mentioned. By the use of any of these instruments, the pressure in the armlet is raised until the radial pulse is gone. It is then very slowly lessened until the pulse is just perceptible. The reading on the scale at that instant is called the systolic pressure. If now we reduce the pressure in the armlet very gradually until the column of mercury shows its greatest pulsation at a certain level, these oscillations diminish rapidly. The lowest point at which it remains maximal is the diastolic pressure, as described by Sahli. This is usually 25 to 40 mm. lower than the systolic reading.

The blood pressure at a given moment, in a normal human being, depends on several factors, but the three most important ones are, cardiac force, peripheral resistance, and elasticity of the vessels. Increased force of the heart, or increased resistance,

whether due to arterial thickening or to diminished size of the vessels through the vaso-motor system, means a higher pressure; lessened cardiac force, or diminished resistance, means lower pressure. It was obviously necessary, if any real use was to be made of blood pressure variations, either in health or disease, that some standard or average be determined, as a point for comparison.

The result of much study and many observations, gives us the following normal averages, considered by Janeway sufficiently reliable, for comparison. Systolic pressure of 130 mm. in a young adult; 145 mm. in middle life; 90 to 110 mm. in childhood. The lower limit being in adults, 100 mm. In children, 80 mm.

Janeway also says, if an average of several readings is 145 mm., or above, before middle life, or 160 mm., or above, after it, it is to be considered pathological. The diastolic pressure is, as a rule, between 75-100 mm. The pulse pressure, as described by Erlanger, is the difference between the systolic and diastolic pressures.

All observations, to be as accurate as possible, should be taken as nearly as may be under similar conditions; as for example, the patient should be lying down rather than sitting or standing. There should be no unusual or avoidable excitement, no extreme fatigue. The same hour in the day should be selected, and not too near meals.

It is admitted by all observers, that these and other variations, either in the patient himself or in his surroundings, will affect the blood pressure readings, but they would also affect the rapidity or regularity of the pulse, and even possibly the temperature, and we should estimate our blood pressure readings, by due allowances for circumstances, as we always do the pulse.

Certainly, also where possible, more than one observation should be taken, and variation should be carefully recorded, and where possible, accounted for. But allowing for all the possible variations, it can certainly be accepted that in health, the figures just quoted represent the great majority, and that essential variations from these, if found to be reasonably constant, are pathological. Erlanger, Janeway, and many other observers, have made elaborate studies of the effect on the blood and pulse pressure, of changes of

posture, as in standing, in sitting, or on lying down; on the effect of muscular exertion, of immersing the body in baths of various kinds, of exposure of the body to various temperatures, on the effect of eating, of sleeping, of alcohol and tobacco, and of psychical states, and of the changes seen at different hours of the day, in persons of different temperament.

I can only hint at these various phases of this most interesting subject, suggesting also that in the conclusions which I have already given you, or shall give, all these many things have had due consideration and form a pretty substantial basis for the average readings and practical use of the sphygmometer in health and disease.

We shall find then, as a symptom in a given case, the blood pressure reading, under fair conditions, above the average, a high pressure, or below the average, a low pressure, and we must determine if possible the cause of such change.

High blood pressure is to be found in various diseased conditions, and is temporary, or comparatively permanent. Remembering that there are two main causes, viz., cardiac force, and peripheral resistance, we realize at once several conditions in which it should be present. The highest recorded pressures are found in acute compression of the brain, whether due to fracture of the base of the skull or to an apoplexy. Cook and Briggs report a case of cerebral hemorrhage in which the pressure was nearly 400 mm.

Any acute pain may cause a temporary rise of blood pressure, for example, in biliary or renal colic, during the course of labor. The visceral crises of tabes, various drugs, especially of the digitalis group, which both increase cardiac contraction, and constrict the peripheral circulation. Adrenalin, strychnine, and ergot, by constricting the peripheral vessels, will serve as examples of drug effect.

In various nervous diseases, as melancholia, and in some of those usually classed as neurasthenics, the blood pressure may be found very high. An important point is, that where from these or other causes, a high pressure has been maintained for some time, a rapid fall is of serious significance.

These causes mentioned are, of course, more or less temporary; for permanent high tension, two conditions are needed — arterio-

sclerosis, with its permanent changes in the peripheral circulation, and hypertrophy of the left ventricle.

Four points of importance must be clearly brought out here. First: If we have evident thickening of the peripheral arteries, and the sphygmometer shows low pressure, we shall usually find the cardiac hypertrophy has given way, and the weakened and exhausted left ventricle is no longer able to drive the blood against the unnatural peripheral resistance. The pressure must therefore fall, and this becomes a very important sign as to the real state of the heart.

Secondly: A high blood pressure and cardiac hypertrophy, with its sharp aortic second sound, may be found, but no evidence of thickening of the peripheral vessels. This condition has been shown by a number of observers, to be due to the irregular development of the sclerotic changes, the vessels of the splanchnic region suffering instead of the usual peripheral vessels.

Janeway quotes Hasenfield and Hirsch, in the statement that arterio-sclerosis only leads to cardiac hypertrophy, when the splanchnic vessels are involved. This point is of the greatest importance. We all see every day, persons with evident sclerosis of the temporal and radial arteries, but we can detect no heart change nor rise in pressure. Such persons go on year after year, in excellent health, and even bear an attack of some acute disease very well. The fact is, their splanchnic vessels have escaped the sclerotic changes. And this cardiac hypertrophy has been maintained.

The next patient has high pressure, cardiac hypertrophy and all, with no evident change in temporals or radials. In him, the splanchnics are the vessels involved, and his condition is important, if not immediately serious.

This one point will settle the prognosis of many a man in middle life, for without great care, his years cannot be many. I would call the especial attention of examiners for life insurance companies to this point.

The third point is the very intimate relation of these arterial and cardiac changes, with all they include, to chronic interstitial nephritis.

For the purposes of this paper, the question may be summed up in a few words. We will not open the old dispute as to whether

the chronic kidney is due to the arterial change, or the arterial change to the kidney. It is undoubtedly true that arterio-sclerosis and cardiac hypertrophy may exist, without chronic interstitial nephritis, also that whether as cause or effect, the kidney changes may be present.

In all such cases, frequent and minute urinary examinations should be made for the presence of albumin, casts, and urinary solids, and the absence of such kidney changes only determined after all means of exclusion have been used.

But we must not conclude that kidney change is surely present because we find cardiac hypertrophy, high pressure, and evident arterial change. Loeb believes that high blood pressure is primary, and cardiac hypertrophy secondary, in acute and chronic nephritis; the high pressure, he states, is a regulating phenomenon, but whether from chemical or reflex means is not known. He found the pressure higher when uremia was impending.

If we know then the average pressure in any case, a sudden rise is a symptom of increasing trouble and a sudden fall would probably mean a giving way of the cardiac hypertrophy, with weakened action of the heart, always in such cases a serious condition.

Fourth: I must mention the probability that there are persons showing a permanently high pressure, in whom neither arterial nor kidney change can be found. Doubtless such cases are not frequent, but some observers have shown their existence, and Janeway concludes that slight and unrecognizable change probably exists in the splanchnic area.

It is certainly true that whenever permanent high blood pressure can be found, some serious condition exists, or will soon exist, because whatever the primary cause, very soon the heart must hypertrophy and the arteries must suffer. An hypertrophied heart may for the time being do its work completely, but as some one has said, it is not as good as a normal heart. Thickened arteries, wherever they may exist, and to what extent, are not as good as normal arteries. The future life of such a person must therefore be uncertain.

It seems to me that no further argument is needed for the rou-

tine use of the sphygmometer. By this means only can hypertension be accurately shown, and hypertension is always an important symptom. In brief then, a high tension indicates an excitement, so to speak, of the circulation, due either to nervous causes, to changes in the arterial system, to conditions of the blood due to imperfect digestion, or failure of the eliminating organs.

The relation of a low blood pressure to certain diseases is important, both from the diagnostic and prognostic point of view, as for example, in chronic wasting diseases — phthisis, cancer, etc. — in the later stages of some acute diseases. Typhoid fever carries a lower pressure than most other diseases, a sudden rise being a valuable symptom of perforation. Cold baths increase the pressure 10 to 20 mm., the effect lasting, however, but a short time.

In the last hours of life the tension, of course, falls rapidly. In shock or collapse, either of medical or surgical origin, a low pressure is the essential point. Drugs causing vaso-dilatation — as nitroglycerine, amylnitrate, and alcohol — of course, lower the tension for the time being. But the relation of a low tension to arterio-sclerosis is limited.

Calling 90 mm., by a 12 cm. cuff, the dividing line, a lower pressure becomes the most important evidence of cardiac failure, and vasomotor disturbance, especially when it is known that previously high pressure existed. The result of this low pressure is an increasing amount of blood in the veins, with a lessening amount in the arteries. The larger organs become congested, and torpid, with all functions disturbed.

We have then a low tension, seen in all exhausting diseases, in sudden shock of surgical or medical origin, and in the last stages of failure of the heart, whether due to a primary heart disease, or as a secondary effect of other disease; and also, a low tension must at some time follow a period of high tension, whatever the cause may have been.

The normal action of the brain, whether in the waking or sleeping state, depends on a normal blood supply, and therefore on normal action and condition of the heart and arteries. Leaving out of consideration the many other causes for disturbance of the cerebral circulation, with increase or decrease of the blood pressure, as

the case may be, it is evident how great the possibilities of trouble may be when the changes involve, for example, the carotids, allowing a much larger amount of blood than normal in the cerebral circulation, or when the cerebral vessels themselves are involved, or when in the early stages of the sclerotic changes, involving, perhaps only some peripheral vessels, either with or without corresponding changes in the kidney, the heart hypertrophies, and the circulation in the brain, as elsewhere, is much more rapid than normal.

In such cases, the brain functions are and must be disturbed, during the waking hours, but for such, insomnia becomes a distressing condition. Right here, the sphygmometer will tell us the whole story. The blood pressure will be high, and instead of prescribing some hypnotic, we intelligently and carefully lower blood pressure, to the great comfort of our patient.

Although it is, perhaps, a little outside the limits of my subject, I must call your attention to the great number of the so-called neurasthenics, in whom the sphygmometer will show disturbance in the blood pressure. They may have sclerosed arteries or not, but anyway, as a reflex or from auto-intoxication, especially from the presence in the blood of undigested nitrogenous food products, they have a high pressure with corresponding nervous disturbances, and particularly with insomnia. In another case, the pressure may be too low, with the disturbances that would naturally follow. I find the sphygmometer of the greatest practical help in determining the exact condition of these patients.

I have three cases on hand just now, in whom a low blood pressure prevails. Two are tired-out men, with the ordinary symptoms of nerve exhaustion, but both having, on any sudden exertion, as lifting or coughing or sneezing, severe pain and a feeling of great pressure in the head. One cannot crank his automobile without severe distress. The pain lasts two or three minutes and then subsides. Both of these men showed a blood pressure reading of about 100 mm. on a number of occasions.

Thinking that their vasoconstrictor apparatus was not working well, and allowed a sudden increase of blood in the head, I gave them digitalis, ergot, etc., and soon found them improving, with a slowly rising blood pressure.

The third case was one of orthostatic albuminuria. I found his morning urine clear of albumen on all occasions, also his morning blood pressure about 130 mm. About 11 A. M. he began to pass albumen, the amount increasing as the day passed, and the blood pressure steadily lowering, until at 6 P. M., the quantity of albumen was greatest, and the blood pressure lowest — between 100 and 110 mm.

The indications for treatment seemed clear, and the six o'clock urine now contains but a small part of the albumen it formerly yielded, and the pressure does not go so low. Yesterday, about 120 mm. at the same hour.

Some interesting work has been done in the study of the relation of arterio-sclerosis, involving the cerebral vessels, to mental diseases. I can only mention this most interesting subject, but the practical point is obvious. If high or low pressure is found, its regulation will certainly help the patient, and possibly its correction may go towards preventing the subsequent mental changes.

It is probable that some of the nervous disturbances of the menopause are due to changes in arterial tension, either a high or low pressure, bringing its discomforts. Beginning arterio-sclerosis may, of course, be present already, but we must also remember that a constantly increasing tension may in itself induce subsequent sclerotic changes in the arteries. In this class of cases also, the sphygmometer is a very practical help in diagnosis and treatment.

Of the use of the sphygmometer as a help in watching the effect of treatment in heart, kidney, brain or other diseases, in estimating the variation of blood pressure in valvular diseases of the heart, there is only time to suggest that it is an interesting study, with very much yet to be learned. There is not as yet much definite knowledge in regard to pressure changes in chronic diseases of the heart. In these cases, the estimation of the diastolic pressure seems especially important, the difference between that and the systolic reading being more marked than in other conditions. This is marked in cases of aortic insufficiency. As a rule, the systolic pressure is rather high. In cases of broken compensation, with high pressure, the patient is much improved by lowering the pressure. If

the pressure is already low, it should be raised. These indications for treatment are important and helpful.

Treatment.—The treatment is a large subject, in a general way. So far as possible, we must reverse our patient's manner of life. The over-worked man must work less, the lazy man must work more. The over-fed man must eat less, the under-fed man must eat more. Every possible improvement in digestion must be obtained with especial attention to the process of elimination, by kidneys, bowels, and skin. Where certain organs are markedly affected, as the heart or kidneys or brain, especial attention must be given to them. Insomnia has been mentioned as an important result, and always needs attention.

The diet should be general, but containing as large a proportion as possible of fruit and vegetables and cereals, without too much nitrogenous food.

Carbonated and other baths may be used, and as many authors might be quoted in favor of the iodine preparations as could be quoted as opposed to them. For most cases, some use of the alkaline preparations is helpful.

Really, general rules amount to but little. Each individual case must be studied most carefully, and the diet, the manner of life, the things used, must be such as careful observation shows are truly helpful. As showing the results of treatment, the sphygmometer readings are most useful.

In Conclusion.—It is admitted that blood pressure readings are not final in the diagnosis of any disease. In the prognosis, they are suggestive and helpful, and in prognosis we need every possible help. In treatment, they are more helpful. A high pressure can be lowered, a low pressure raised, and repeated observations will show just how well our treatment is working, and will help us to determine in each individual case the safest and best means of obtaining these results. But on the other hand, blood pressure changes are always suggestive and important; the use of the sphygmometer takes but little time, and its readings are at least helpful.

I would urge its more general use.

DISCUSSION.

Dr. Oliver T. Osborne (New Haven): Mr. President and Members: We have listened to a very scholarly paper, and certainly the scientific side of it has been most splendidly covered. I can but agree with the speaker that there is no question but that increased blood tension is the cause of arterio-sclerosis always. Irritants may be circulating in the blood, and, by irritation of the arteries cause increased tension. If we look through the various causes, we find that increased tension is always the forerunner, whether it be from lead, whether it be from gout, or whether it be from the irritation of alcohol, causing an opening and shutting of the blood vessels, giving them too much exercise, and the over-exercise of any structure of the gland or body sooner or later causes a sclerosis of it.

Normally, as has just been stated, we are only as old as our arteries. As we grow older our blood tension increases. The thyroid gland is the part of the body which furnishes the most vaso-dilator material. This gland begins to atrophy, and its secretions to diminish after 45. At this time then, normally, the suprarenals furnishing this vaso-pressor material with the gradual diminution of the vasodilator material give a relatively increased tension to the arteries. This, I believe, is the normal cause of old age—*i. e.*, arterio-sclerosis.

The treatment of hypertension is the point to consider. Anything that prevents constant or recurrent high tension will prevent arterio-sclerosis. We can have arterio-sclerosis, and yet a weakened left ventricle, and a low pulse-tension of the radial arteries. Nitroglycerine is one of the most useful drugs if increased tension is present. Iodides in any form are always useful because, I think, they are stimulants to the thyroid gland.

Arterio-sclerosis is certainly on the increase, because of the tension of our lives. We are always going at full speed, competition makes us hustle and hurry, and we are keeping up that nervous tension; our electric cars and our trains must go fast, everything is a constant hustle, and all the more reason why we should take vacations. Once a week most men should have a day; at least once a month they should have two or three days, and certainly once a year a month, otherwise we keep up too much tension.

Dr. Ernest H. Arnold (New Haven): Mr. Chairman, I would like to recite a case that recently came under my observation to show what the general practitioner, who is not on the lookout, may expect. A man aged 45 years, a business man, came to me because he has become bow-legged; it commenced about a year and a half ago, and has grown to such an alarming degree that he can no longer hide the fact that he is bow-legged from the knee down. I didn't know what to make of it, there was no history of trauma, no history of anything, as far as arterio-sclerosis goes, no alcohol or syphilitic history; the man had had some business troubles for a year, he was temperate, in apparently good health, with no history of lead poison. I don't know whether I asked for it at the time, but certainly there was none in the history. The examination of the heart

was negative, the pulse was regular, the pulse near the arteries at the temple and radial normal to my touch, the urine examination was negative. I had an X-ray taken of the bone of the leg, and lying alongside of the bone was unmistakably a sclerosis of the posterior and anterior tibial artery, with great big thickened places of calcareous matter all along its course. The diagnosis of arterio-sclerosis was made. Looking up the case afterwards, I believe there was no mistake. The treatment I shall not discuss.

The next case was a young man 28 years old who had run the gauntlet of all the profession, who had been treated for neurasthenia and everything else. He went down to New York in despair (that is the place of despair of most people here who don't know where else to go when they get desperate) (Laughter) and he fortunately fell in the hands of men who diagnosed the case, because this man complained of a pain in the chest, a pericardial pain which increased on moving, especially in bending. The pain kept him awake nights. A diagnosis of the tuberculosis of the spine was made and the man was kept in a plaster jacket for two years. His condition did not get better, and he came to New Haven finally and fell into my hands. I could not make a diagnosis of tuberculosis of the spine. I had an X-ray made and the X-ray showed the spine to be absolutely sound, there was no trace of tuberculous disease there, but it showed arterio-sclerosis. The examination of the urine showed nothing, the man had no hardening of the temporal or of the radial arteries.

The third case was a man of 35, who had an injury to his knee; water on the knee followed. He was treated by splints, by massage and by heat before he came to me. It did not yield to treatment. He was in perfect health otherwise and came for relief from the knee trouble. He was in despair, and I suggested an X-ray. I felt sure there was no lesion, and when I got the picture, there was arterio-sclerosis. There was nothing in the urine, nothing in the heart, no high-tension radial or temporal arteries.

A man of 63 came with the history of an old sprain received years ago, it never gave him any trouble until lately. He seemed a perfectly healthy man and I treated him. He had been treated before with no results. Examination of the urine was negative, the history was negative, the heart was negative, the pulse of the radial and temporal arteries were negative. The diagnosis was made with an X-ray.

I want to draw your attention to the definite means that we have in the X-ray for making a diagnosis which leaves no doubt when properly performed.

The Home Treatment of Tuberculosis.

DAVID R. LYMAN, M.D., Wallingford.

There is no disease that the general practitioner is so often called upon to treat as tuberculosis, none against which he labors under so great a handicap, and none that subjects him to so much adverse and unjust criticism. The premonitory constitutional symptoms that are present before the disease is recognizable in the lungs by any known means of examination, often cause the patient to seek medical advice before the symptoms are sufficiently definite to enable the physician to make a positive diagnosis — and if he frankly fulfills his duties by telling the patient that while he can find nothing in his lungs, yet the symptoms indicate that there may be trouble there, and it is essential for him to return and have his case carefully watched; the patient comforts himself with the belief that there is nothing wrong and does not come back. The chances are that he will rest up for a short while until the symptoms abate somewhat, and then return to his old habits of life — the symptoms reappearing once more, he again becomes anxious and argues that if his physician did not find the cause, he is no good and goes to another — the same process is repeated two or three times (only varied by the prolonged use of some patent remedy recommended by a friend), and finally the patient presents himself to physician No. 3 or 4 with a well-developed case of tuberculosis and a bitter tale of woe as to the incompetence of the physicians he had been to before; whose advice he had not thought necessary to follow and whom he had never given the asked-for opportunity of following the course of his case for sufficiently long to enable them to make a diagnosis.

Even when the physician is accorded the confidence he deserves, and by carefully following the case is able to make an early diag-

nosis of tuberculosis, that very diagnosis, instead of simplifying his difficulties, usually multiplies them, for then the question of treatment arises.

It is not the purpose of this paper to discuss the relative merits of this or that climate, or of home treatment and sanatoria. If the circumstances are such that the patient can go to some sanatorium and be received there for a term of treatment, the problem is at once solved so far as the present needs are concerned. But tuberculosis cannot, except in very mild, early cases be really cured in a term of a few weeks or months in any sanatorium in any climate. And though the patient may return free from all symptoms of disease and able to resume his life's work, yet for a longer or a shorter period of time he must be dependent upon his family physician for advice as to the condition of his lungs and the adjustment of his daily life to conform with the needs of his case.

The sanatoria at present in existence can, however, accommodate but a small proportion of the cases of even early tuberculosis. The great majority of sufferers from this disease must find restored health, if at all, through home treatment under the care of the family physician, and there is no general practitioner who has not on his visiting or office list several of these cases, whose successful treatment is at all times one of the most difficult, and often apparently, one of the most hopeless problems with which he has to deal. The out-of-door life, open windows, milk and eggs have been so widely heralded as the proper means for the cure of tuberculosis, that few of the laity realize that the essential in the successful treatment of this disease is constant, intelligent medical supervision of the patient's daily life, extending over many months and involving an accurate knowledge not only of the condition of his lungs, but of his environment, his daily habits in their closest details, and of his mental attitude as well. And though there be those so fortunate as to get well without this supervision, yet for the greater majority, it is as essential as the rest, air, and food.

The first requirement for the successful treatment of a case of tuberculosis is that the patient be told just what the trouble is; not that his lungs are weak, or that he has bronchitis, or that tuberculosis may develop if he is not careful, but that he has tuberculosis

of the lungs. It is not essential to tell him just how badly his lungs are affected; in fact, it is often advisable not to do so; but it is simple justice to him to let him know the real nature of the trouble, for otherwise he cannot possibly appreciate the necessity of all the little seemingly unnecessary details of life he is called upon to observe; nor can he know how to protect the other members of the household from the danger of contracting the disease from him.

We often see cases in which the family are bitterly opposed to telling the patient what the trouble is, for fear the shock may be too great; but the physician should insist upon this as he would upon any other essential of his treatment, for it is utterly impossible to have the necessary co-operation of your patient without it. The patient who has not sufficient intelligence to appreciate this frankness from the physician, has not sufficient to enable him to carry out the long tedious routine of treatment.

The next essential is the instruction of the patient and the family as to the necessary sanitary precautions to be observed. They must be instructed as to the disposal of sputum, the care of soiled handkerchiefs, the simple details of individual silverware, glass, cup, etc., for the patient, and the boiling of these after use, also the necessity of separate beds and of separate rooms where possible. The detail of these matters is well known by every practitioner, but I would strongly advise that the use of pieces of cloth or metal vessels for the reception of sputum be abolished, in favor of the paper sputum cup. These can be procured through any drug store, and are much more sanitary and infinitely less disagreeable than the other method of caring for the sputum, and their cost is but one and one-half cents a day.

In the beginning of the treatment it is not sufficient that a patient be advised to lead an out-door life and stop work for the time being. The physician who does no more than this is not fulfilling his duty to the patient. It is necessary not only to describe in detail the life that he must lead, but also to visit his home and advise as to the manner in which these details can best be observed. Throughout the earlier months of treatment very limited exercise or, more often, absolute rest must be the rule, and the patient must,

where possible, take his rest out of doors, no matter what the weather. Left to his own devices he will stay out a part of the day, if the weather be good, and none of the day if it be bad. The physician must at the outset visit the patient's home and study its situation, ventilation, and available shelter out of doors. He must advise whether it be better to take a certain well-ventilated room on the upper floor and climb the stairway to and fro, or whether a less suitable room on the ground floor and with no stairs to climb is preferable. He must show how the bed may be placed and how the windows can be kept open day and night without danger to the patient. He must advise as to the means of partially enclosing existing porches or the erection of new ones, or of a tent or shack, so that the patient can be out of doors in any and all weathers without risk to direct exposure. He must instruct the patient as to how to dress and how to wrap up while out of doors, and see that his body is sufficiently protected from the cold and at the same time not covered with chest protectors and heavy underwear, so as to be in a constant state of perspiration and more than ever susceptible to the influence of atmospheric changes.

After the preparatory arrangements for the home treatment have been fully discussed and arranged, it is next necessary to give explicit instructions as to the details of the treatment itself. I shall not enter into a discussion of the medical treatment. Aside from the many sera in use, the benefit of which are at present still a matter open to discussion, the medical treatment of tuberculosis is purely symptomatic, and cough that disturbs a patient's rest, hæmoptysis, the pain of pleurisy, the depressing night sweats, the lack of appetite and the many grades of indigestion that present each call for treatment that will relieve them. But unless some such distressing symptoms be present, the patient's stomach is far better off if he is given no medicine at all.

The eventual cure of the disease is dependent upon no known artificial remedy, but upon the natural powers of recuperation and regeneration which every individual possesses. And in order that these indefinitely understood factors may be able to successfully cope with the disease process, the treatment aims to restore the patient to his normal general health, where he will have constantly at his command a reserve of strength over and above that

needed for his daily life and at the same time aim to teach him how to maintain this condition after his return to active life.

Toward this end the means now most generally employed are rest in the open air and the proper amount of readily assimilated food. It is becoming more and more generally recognized that certainly in the earlier months of treatment, rest is far more important a factor than has been supposed. From the onset of the treatment, and often handicapped by a poor appetite and an impaired digestion, the patient must assimilate sufficient food to supply fuel for his every thought, word, and action; to offset the toxins formed each day by an active disease process, and yet have a residue to apply to the rejuvenation of his normal resisting powers. And when these resisting powers have been built up to their normal condition, he has just reached the point where the healing process in the lungs themselves commences, which is in turn dependent upon there being always a residue of fuel from his food over and above all other requirements that can be applied to this process of healing. And it stands to reason that the less fuel the patient consumes in exercise, physical and mental, the more he will have left to apply to the building up of his general system, and the sooner will he be able to accumulate and maintain that reserve, absolutely essential for the healing of his lungs.

At the onset of the treatment, rest is therefore essential—rest as absolute and complete as the patient can be induced to make it. Its duration must, of course, be governed by the progress of the case. In an early case all symptoms of active disease, such as temperature to 99.5° or 100° , hæmoptysis, sweats, loss of weight, lack of strength and dyspnœa are indications for the employment of absolute rest, to be continued until after these symptoms have all been absent for two or three weeks at least. Long after the active symptoms have disappeared and the patient has apparently recovered his strength and looks, and feels perfectly well, the physician must endeavor to impress upon his mind the absolute necessity of always maintaining unimpaired a reserve of strength. To stop as soon as he feels tired is too late, for that means that the reserve is already gone. He should rather avoid, most carefully, anything that might tire him. The necessity of rest is the most difficult of all the prin-

ciples of treatment to impress upon the patient's mind, for as his condition improves, the constant restraint becomes more and more irksome, and when the patient begins to look and feel perfectly well, the physician's power and patience are usually taxed to their utmost in the endeavor to convince him that the regularity of the life he has led must be in nowise abated. The need and benefit of fresh air in abundance is easily taught, for once the patient has become accustomed to living out of doors, the atmosphere of a close stuffy room is intolerable to him. The main difficulty here is to teach him that no matter how wet or cold it may be, if he be properly sheltered and clothed, the air out of doors is not only not harmful but is as essential to his welfare as when the weather is good. The third factor — diet — will cause the physician more anxiety and care. Forced feeding of all cases of tuberculosis is rapidly giving place to more rational measures; and a patient whose appetite and digestive powers are such as to enable him to gain weight up to the normal for his age and height, is no longer compelled to take large quantities of milk and eggs as extras; incurring grave risk of over-taxing and deranging his digestive system thereby. But while a patient with a good appetite may be left to follow its lead, as a rule, the physician must be on his guard, lest the patient's idea of a good appetite be far below what it should normally be. In cases where a reported good appetite is not accompanied by the looked for gain in weight, it is a good plan to have the patient keep a minute memorandum for one week of all that he eats and drinks each day. A careful study of this will show at once if his appetite is a safe guide for him to follow; and if he be not taking sufficient food for his requirements, then milk, eggs, oils or emulsions can be added sufficient to bring up the total to the required amount. Also it is often necessary to prevent the patient from trying forced feeding on his own initiative. So much has been heard of milk and eggs in relation to the treatment of tuberculosis that the patient usually has the idea that the more of these he can take, the quicker he will get well; and often must be restrained lest his zeal in this line produce disastrous results.

The indefinite amount of detail and supervision required in the successful carrying out of home treatment is an enormous tax

on the time and energies of the physician; and can be of no avail unless it is met by the earnest intelligent co-operation of the patient. It is, of course, impossible for all the details of the treatment to be gone into minutely during the time the physician has at his disposal for a visit at the home or at his office. It is only by means of a diary kept by the patient and given to the physician each week to study at his leisure, that the latter can really keep in touch with the patient's daily life. In this diary should be recorded, either by the patient or some member of the household, the temperature pulse and respiration of morning, afternoon, and evening, the weekly weight, the number of hours spent out of doors — the hours of rest and of exercise, with the amount of the latter, as accurately expressed as possible, and the ways in which the rest hours have been whiled away, whether reading, sewing, playing games or whatnot. In short it should give an accurate account of the patient's daily life, and include any noticeable changes in any of the constitutional symptoms, such as cough, expectoration, pleurisy, hemorrhage, sweats, etc. This daily diary is also of great value in that it teaches the patient to keep track of his symptoms and enables him to gauge their importance; and because it will help to impress upon his mind the fact that on his part, regularity in his daily life is the main requirement, and his chance of ultimate recovery is in almost direct ratio to his appreciation of the importance of such regularity.

By this means the physician can keep closely in touch with the patient and learn of indications in the treatment long before the patient would deem them of sufficient importance to mention. The study of this diary, combined with a monthly examination of the lungs, will enable the physician to dictate the course to be followed from month to month. And this course must be vigorously pursued until the disease is thoroughly arrested and the patient able to take up work. After that, this patient should report for examination and advice every two or three months and whenever any symptoms arise that cause him the least uneasiness.

One of the greatest handicaps with which the physician must contend, is often to be found in the family of the patient, who are sometimes, I regret to say, only too ready to view the physician as

an alarmist and to minimize the importance of his continued caution, once the patient really begins to improve. They, too, must be impressed with the necessity of each little detail of the treatment being observed, and made to realize the importance of their co-operation toward keeping the patient cheerful and contented.

There remains yet to be mentioned one great aid toward the training of the patient and his family so that they can intelligently co-operate in the treatment. The *Journal of the Outdoor Life* is a monthly publication edited in the Adirondack Cottage Sanatorium at Saranac Lake, and published at the rate of \$1.00 per year. Its pages are devoted chiefly to articles on the practical details of the treatment of tuberculosis, contributed by physicians engaged in this work in various sections of the country, and by laymen who have been through the cure themselves and are endeavoring to point out for others the obstacles they encountered and the mistakes they made and paid for. The *Journal* is written in a practical readable manner that makes it of greatest value to anyone whether in or out of a sanatorium, who is trying to get well of tuberculosis, and I advise every physician who is treating a case of tuberculosis at home to have his patient subscribe to this *Journal* with the assurance that he will never spend a dollar that will bring so full a return.

It has been my endeavor to present in general terms the main requirements for the successful home treatment of tuberculosis, which, as I have said, I regard as one of the most difficult problems with which the general practitioner has to deal. But though clinics, sanatoria, and charity organizations have a part to play in the crusade against this disease, the main burden of the fight for its control falls on the family physician, who, though he may not be able to report many cures and often sees months of work spent with apparently no return, is nevertheless the one on whom the instruction of the public most depends, and to whom they will be most indebted for the eventual fall in the death rate from this disease.

DISCUSSION.

Dr. Henry F. Stoll (Hartford): There is really nothing that I can add to this paper, so I will simply mention one or two of the points that seem to me particularly deserving of notice. I think Dr. Lyman sized it all

up when he spoke of the attention to details. There can be no doubt but that sanatorium treatment is the ideal treatment; but that is only available, of course, to a very small number of people, and therefore I think it behooves us to study the methods in vogue at the sanatorium, and endeavor to incorporate as many as possible in the home treatment. The Doctor mentioned the importance of seeing the bedroom; it should be light and the windows wide open. It may be the window opens on an air shaft, or it may have no window. It is well to suggest then that the patient take the front room in the house, where probably he can have three windows open instead of one.

Then I frequently have been interested when I asked patients if they had the window wide open at night. Yes, they had it wide open. Blinds wide open? Yes, blinds wide open. Shades up? No; shades down. Well, of course, with the window wide open and the shades pulled down, they might just as well have the window shut. They must understand that the window must be wide open, blinds wide open, shades way up and curtains pulled clear back. If they do that they will get a surprisingly larger amount of air than they have been used to.

The daily record of which the Doctor spoke, I am heartily in favor of. It not only shows the patient you are really interested in his condition, but it gives him something to take up his time, and often affords you means of knowing the reason why he is not improving if he does not gain. When you tell him he must be out of doors all the time, he cannot grasp it. If you said half an hour or two hours, he might understand it, but all the time, three hours in the morning, and three hours in the afternoon, or four hours, as the season may be, he absolutely cannot understand. And unless you have him put down the time each day that he spends out of doors, very frequently he will cut the time down, particularly if the wind or weather is unpleasant, and stay out of doors half an hour, or not at all.

In regard to rest, as the Doctor has said, a patient with a temperature of 100%, and a pulse of over a hundred, requires rest, and I have repeatedly seen cases that have been up and dressed but lying on the bed a great part of the day, and really not exercising at all, that still continued to have a temperature. When they were undressed and put in bed their temperature and pulse would come down. There is no question but that rest in bed is essential, and not lying on the bed with all the clothes on.

In regard to instructing the patient as to the real nature of the disease.—I saw a man recently in the dispensary who had been examined a little over a year ago, and he had not been told what the trouble was. He had been advised to go away to some sanatorium where he could be treated, but he wasn't told what his condition really was. He improved for a time and then relapsed. I asked him: "Do you think if you had been told that you had tuberculosis that you would have taken better care of yourself?" and he said, "Yes; I honestly do." The Doctor simply had told him to be outdoors and take care of himself, but did not tell him he had

tuberculosis. The result was he improved for a time, and, not considering his condition very serious, he stopped his treatment and relapsed. When I saw him his lungs were very extensively involved.

Ambler has mentioned a very important thing, and that is in regard to the condition of the other members of a family where one is tuberculous. He has written two or three articles urging the examination of all members of the family once in six months or once a year; because where a case comes to you very much advanced there is a strong probability that some other member of the family has incipient tuberculosis. They may be called "neurasthenic," they may have "stomach trouble," but if one examines all of the family once in six months he will be surprised to discover cases of tuberculosis that were not suspected by anyone.

Dr. J. P. C. Foster (New Haven): Mr. President and Members: There is nothing that I can add as far as the home treatment of tuberculosis is concerned to what has already been so well said by Dr. Lyman and Dr. Stoll. But I would like to take a few minutes to say a word as to whether we should use the home treatment for tuberculosis always. I am an older man than some of you, but I have seen the day when it was all climate, and yet I have heard our admirable President say today that climate wasn't in it.

I have just come in from a meeting of the national association in Washington, where I heard men of the highest authority say that all cases should be treated at home, and that it was very desirable that they should be.

Now, I think there is a mean between all this. I think we are getting a little wild about home treatment. You have three classes of patients, everyone of you; you have (1) the rich man, you have (2) the middle man, and you have (3) the hopelessly poor man. If you get a man who is rich and able to do as he pleases, I think you make a great mistake if you do not put that man in a different climate from the one he is in now, if he lives in the State of Connecticut. He may go north, south, east, or west; it is for you to decide. We cannot all go to the same place. I wouldn't go to the Adirondacks for anything in the world. If I had got tuberculosis I would go to Florida, as I did before. I will stand up for poor old Florida. Some say that Denver is the place; that in Denver they have got a certain cure for every one of your patients; let your rich people go there, for they are the people who will be content to go away from home and receive the treatment.

A case came to my knowledge within the last three years of a prominent New York gentleman who happened to be in the city visiting and strolled into my office and said he thought he had a cold. I examined him and told him he had tuberculosis, and of course made a sensation. He talked about his life then, and Colorado, etc. I said, "Never mind." I knew he was a man of wealth. I asked him about his country place and found he had a beautiful one up on the Hudson river. I told him to go there. He went there and did splendidly, until his friends in New York

got hold of him and told him he had nothing but the opinion of a country doctor and must have a specialist. The specialist considered him lost, and he went to Saranac Lake, Colorado Springs, getting worse and worse, until finally the family consulted me to know what I thought of a last device, of his going to Asheville. I told the patient to keep on, and the last specialist would have him dead on his hands. (Laughter.) They treated him at home and he is well and is at work. A case that is going to be as nervous as that had better stay at home.

The middle class of people (the class of people we are getting at the sanatoriums in different parts of the country) can have home treatment or local treatment and do exceedingly well. I advise most thoroughly, though, that they may be taken out of their homes, and I advise you people in Hartford to find some place a few miles out. I advise New Haven people go to Woodbridge or Bethany where they can see their friends occasionally, and then you haven't got the bother of looking after the family.

I am so hurried, I can't begin to tell you what I want to about this thing. I think we have got it on a basis where we can do well. The great problem we have got on our hands is what on earth are we to do with the great unwashed? Those are the people that make the trouble. They are infecting towns, they are infecting everything, they cannot go anywhere, they cannot go to a sanatorium and they won't be treated at home. The day is coming, I know, when our municipalities will have suitable tuberculosis shacks and wards connected with their town-house where these people can go and be properly cared for. When they don't behave themselves, I hope the law will be as it is in New York City, that the health officer can compel their residence in such a place. (Loud applause.) You once get those people cleaned out and cleaned up, and you are going to get your tuberculosis problem settled very, very quickly, and it is to that end we have got to talk. I am not worrying a bit about these people in our walk of life and the men who have a respectable livelihood, because they do get taken care of. I want to say one word more, and then I will close.

Do not be too favorable in your prognosis. I have heard this last week an eminent man who said "Give me 100 cases of incipient tuberculosis, and I will give you 100 cures." That man ought to be prayed for. (Laughter.) He can't do it. (If you get 50% or 60% you get a great deal more than you used to get.)

Dr. Rienzi Robinson (Danielson): I used to be, years ago, when I was younger, a crank on the subject of change of climate. I sent my patients away, and I don't remember that anyone ever came back—cured. I remember sending a good many away. I have had some of the great unwashed that got well under the most unfavorable circumstances and remained well for the last ten years. Why they got well I don't know, but they got well. One case in particular was in a family of a dozen or fifteen, with five rooms

in the house, including kitchen. I went away to Europe and left this patient to die, and came back and found her so well and in such flesh that I didn't know her and had to be introduced to her. I have examined her lungs every year for the last six years, and she has remained well. She is married now and the mother of children. Still I kept sending my patients away until last year I went to California myself, and put up at hotels all over California, waited upon by waiters all coughing a good deal, had plates that had been washed by tuberculous waiters, and I began to get uneasy about California and California climate. (Laughter.) I talked with a good many doctors there in regard to the advisability of sending patients to California. I have three cases which I sent to Florida, but they did not come back cured. These doctors in California told me "if you have patients that are not able to spend at least \$1,000 a year, don't, for Heaven's sake, send them to California, keep them at home, take your chance even in the most miserable tenements you have, but don't send them to California, where, unless they have money, they get homesick, and nostalgia carries them off soon in spite of the climate." You get just as good results in Massachusetts as in Florida, even with the great unwashed. I saw any quantity of patients in California that were worth their millions. In Pasadena I saw one street where it was said nobody could live unless he was a millionaire, for they have to have a million before they are allowed to build on that street, and you must not build a house costing less than \$10,000 to \$50,000. They were coughing just the same; you couldn't walk that street without hearing them cough and wheeze. In fact, I saw nothing there but dust. I could not breathe myself; I could not talk without coughing; I could not walk without leaving my tracks on the sidewalks; there wasn't wind enough to blow the dust away and there wasn't rain enough to settle it. I didn't get what you might call a very high opinion of California as a climate for tuberculosis. When you complain about irritating the throat and larynx with that California dust, they will tell you you have got to have the dust fever, "stay here a year or two and you will get over it." In other words, in a year or two you will get acclimated, and then when you come back here you have to get re-acclimated, and all that seems like a great farce. When we talk about open air, I don't know why you can't get it in our New England hills just as well as in California or Florida.

You go to Florida, and I have been there too, but not for tuberculosis, for I fortunately haven't had it, but I have been there for rest, and have seen the tuberculosis patients crawling around on those Florida sands up and down the St. John's river, growing yellow, getting malaria, getting pickled with it, and finally coming back to get over malaria. Take the native "cracker" in Florida, and what does he look like? There is not a healthy looking native in Florida, you can't find one, and if *you* go down there and stay three years you will have to come back here to get your health. (Laughter and applause.)

Dr. Alvin E. Barber (Bethel): Gentlemen, I had resolved to keep still, but I have had an experience for the last 40 years. I graduated in 1854 and settled on Long Island in July, 1855. After I had been there seven years, working hard, I was taken with pneumonia. I tried to stay. My friends said, go to Colorado, you are going to have consumption. I laughed and went up to the Berkshire Hills, spent one week, came back over my cough. I went to work and worked harder than ever for the month following. My cough came on again, and I finally sold out to a young M.D. who is there now. I went to New York for rest, and matriculated at the College of Physicians and Surgeons. (There were no post-graduate courses then.) I got over my cough and was well. I was requested to come back to my practice, but said no, I have given it up and won't practice there after April, 1866. I left there in April, 1866, and thought I could stay by the salt water. I stayed one year in Bridgeport, and coughed pretty much all the time. I left and went back into the interior and weighed 145. I am settled there now, and have been 35 years, weighing over 180. It was *rest* in the first place I wanted, continued rest. I didn't go to Colorado. I had a family (a wife and two children), and wanted to stay and die with them. I didn't live out of doors, either, as they do now; it wasn't fashionable. (Laughter.) I have had no cough since. I have lived pretty well, not by stimulants (laughter), and not by smoking. I have practiced medicine all these years, but don't much now. I go away on vacations annually and try to live fairly well, for a poor country doctor, but don't believe much in sleeping outdoors. It was *rest* I needed. I was better away from the salt water, and don't look much like dying of consumption. I had a friend who went to the Adirondacks, and he said he was better when he got back, *because he was rested*, but he didn't believe in going up there again. I didn't die of tuberculosis forty years ago, I don't know but I may forty years hence. I am only 75 years old now, but probably tuberculosis won't get a *very* strong hold on me. (Laughter and applause.)

Dr. David R. Lyman (Wallingford): There are a few points in Dr. Stoll's discussion which I would like very much to emphasize, and thank him for having brought them out. One is the importance of absolute rest in bed, and the quicker and much better results you get with that than you do with comparative rest, if you can persuade the patient to take it and stick to it for a little while. And the other point was the importance of the examination of the other members of the family where there has been a chronic case of tuberculosis for several years.

About three days ago I was talking with the physician in charge of the medical clinic at the University of Maryland. He said he never saw a case of incipient tuberculosis there at all until last year he got a nurse to go out and look after his tuberculosis cases. He got a very good nurse, and the result was that often another member of the family that showed no suspicious symptoms at all was found in an incipient stage. Now he has more

incipient cases of tuberculosis than advanced cases. He finds the nurse will seek the early cases, get hold of them, and do something with them.

There are a few that still claim that climate is everything, but I think we are all getting more and more to the idea that it is not climate that is the chief factor. It is *what* you do more than *where* you do it. There is also the problem, as Dr. Foster said, of the great unwashed. We can reason with the others, and the rich people can look after themselves. But we have not only got to find where the poor can go, but to control them. The whole problem of the treatment of tuberculosis is *control*. The unwashed can't control it themselves properly, and at present, where there are no institutions you can put them in, you have just got to do with them at home as best you can. It is only by constantly keeping at them and after them and making them co-operate, that you really can accomplish anything.

Roentgenization in the Treatment of Cancer.

With an Exhibition of Cases in Which the Evidences of Malignant Disease Have Disappeared Under Roentgen Radiation.

CLARENCE EDWARD SKINNER, M.D., New Haven.

One of the burning questions before the medical profession to-day is, "How shall we treat our cancer cases?" The first thought that responds is, "With ablative surgery;" the second brings before us the disheartening proportion of hopeless recurrences that follows such management and which varies from sixty to eighty per cent. in different hospitals. The third invokes the Roentgen ray; the fourth, destruction of the affected tissues by caustic pastes; and the fifth, destructive sterilization of such tissues by massive mercuric cataphoresis.

Of the last mentioned, not enough is generally known as yet to render possible the formation of reliable conclusions, but the results obtained by the father of this method, Dr. G. B. Massey, of Philadelphia, and a few others, are such as to give ground for the belief that it is destined to play a not unimportant part in the future management of malignant disease. Caustic pastes are rationally applicable only to superficial processes, and failures and recurrences are by no means uncommon. This narrows down the choice of procedures in the vast majority of these cases to employment of the knife or the Roentgen ray, or a combination of both.

The possibilities and limitations of ablative surgery in cancer have been pretty thoroughly determined and are very generally recognized and admitted; those of the Roentgen ray are fairly well understood and generally admitted among properly qualified roentgenotherapeutists, but the rest of the profession are very much in the dark as regards this agent, and it is of the utmost importance to sufferers from this disease that knowledge of the subject should

be widely disseminated. To attempt such dissemination by word of mouth alone, however, involves such a strain upon the credulity of those not familiar with the subject, that I shall precede my statements today by an ocular demonstration of the results which have been attained upon a few patients who have undergone roentgenization for cancer during the past four years. Results speak for themselves, and one undeniably positive result speaks louder and more significantly than a dozen negative ones.

The first patient to whom I desire to call your attention is a man fifty-five years old, farmer by occupation. Several members of his family have had cancer.

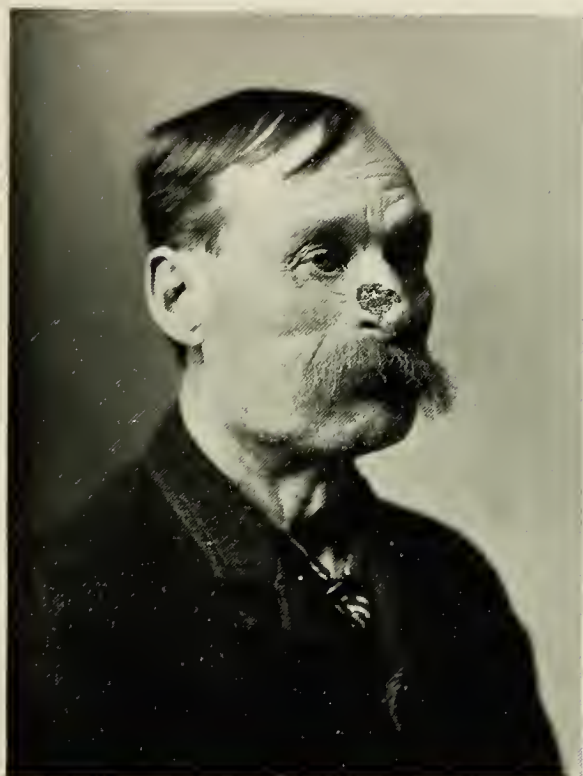
About eight years ago he first noticed a small scab on the side of his nose opposite the inner canthus. It increased in size and ulcerated. Various remedies had no effect upon it and when he first consulted me, on February 12, 1903, it was three-eighths of an inch in diameter, deeply ulcerated with raised, indurated edges, and discharging profusely.

From this time until April 4th, a period of two months, he received eighteen Roentgen ray applications with complete healing as a result. There has been no recurrence and no treatment of any kind applied to the part since, and, as you can see, the cosmetic result is perfect.

The second patient is a man sixty-six years of age, farmer by occupation, whose mother, aunt, and one sister suffered from cancer.

About five and one-half years ago he noticed a small brown spot on his left temple, which was accompanied by itching, gradually grew larger and finally ulcerated. He consulted a physician who recommended the use of a caustic plaster, the application of which was not followed by any beneficial result. The lesion continued to increase in size and the pain in severity, and he finally consulted a surgeon, who told him that the case was inoperable.

He consulted me first on April 29, 1902, about a year and a half after having first noticed the growth; it was then the size of a silver dollar, with raised, indurated edges. From this date up to June 30th, a period of two months, he was roentgenized twenty times with complete disappearance of the lesion as a result. This



CASE III.

was four years ago, lacking one month; there has been no recurrence and he has had no treatment of any sort since. The cosmetic effect, as you can see, is irreproachable.

The third patient is a man sixty years old, painter by occupation. There is no history of cancer in his family.

About ten years ago he noticed an itching mole on the right side of his nose which broke down and increased in size for three months, at which time he applied a caustic plaster which did not cause it to heal, however. He then went to the New York Cancer Hospital where the growth was removed surgically by Dr. Parker Symes. It shortly recurred and increased in size until at the time of his consultation with me, it was the size of a twenty-five cent piece, discharging profusely, and deeply excavated with raised, indurated edges. Here is a photograph which was taken at that time, but it does not show the depth of the ulceration as, through a misunderstanding, the photograph was taken when the lesion was covered with a scab. (See cut.)

He received his first Roentgen treatment on March 10, 1903, and during the next four weeks was roentgenized eight times. During this period the only change observable was that the scab formed more rapidly than before, there was slight lessening of discharge, and slight redness of the healthy tissue about the lesion.

At this time he was forced to discontinue treatment by an attack of acute rheumatism which kept him at home for six weeks. He then called upon me again, but the lesion had entirely healed during this interval and has never recurred or been treated in any way since. As you can see, the cosmetic result is very satisfactory.

A peculiarly interesting feature about this case is the striking way in which it exemplifies the cumulative action of the ray. Almost no change of a reparative nature was observable at the time he received his last application, but during the following six weeks the transformation resulting from the treatment developed rapidly.

Permit me to call your attention to the fact that all three of these cases have been well and free from recurrence between three and four years.

It was my intention and desire to exhibit some breast cases also, but practically all of my cases are private patients and I have been

unable to persuade any of them to appear here, for obvious reasons; I shall therefore confine my remarks upon cancer in this situation to the statement of my belief that the best interests of the majority of such patients demand immediate, radical extirpation, to be followed, in every case, by roentgenization after the wound has healed. It is but fair to state, however, that some operators with greater experience in mammary cancer than myself, regard roentgenization alone, at least in primary, localized cases, with more confidence than the knife, either alone or in conjunction with the ray, and that their results are such as to render the point a justly debatable one, and positively determinable only by future investigation.

The last case to which I desire to call your attention was reported in full by me to the Electrotherapeutical Section of the International Electrical Congress at St. Louis, in September, 1904, and constitutes, as far as I have been able to ascertain, the most remarkable exemplification of the curative power which the Roentgen ray exercises upon malignant disease, thus far observed; certainly no case so striking has been reported up to the present time.

The patient is a school teacher, thirty-nine years old, upon whom an hysterectomy and ovariectomy was done eight years ago for what was supposed to be a fibroid tumor of the uterus, but no microscopical examination was made. About two and one-half years after this operation she noticed a hard tumor in the lower abdominal wall in the region of the cicatrix. There was no pain and no discomfort, but rapid growth.

She consulted Dr. Maurice H. Richardson, of Boston, who referred her to Dr. W. B. Coley, of New York, for treatment by the erysipelas toxins. During the next ten months she was treated with the toxins which caused the growth to decrease in size during the earlier part of this period, but they then lost their power, and at the end of this time, in January, 1902, when she was referred to me by Dr. C. A. Bevan, of West Haven, the mass measured ten inches from side to side at the level of the anterior superior spines of the ilia, eight inches vertically in the median line, and about five inches antero-posteriorly in the median line.

Microscopical examination of sections removed from the tumor while she was under Dr. Coley's care, demonstrated it to be a

fibro-sarcoma, and the mass was rapidly increasing in size. The patient was losing flesh, markedly cachectic, very weak, and complained bitterly of pressure symptoms.

Roentgenization was commenced on January 28, 1902, and during the next four months she received forty-six applications. Her general condition commenced to improve at once, but the tumor itself had increased somewhat on the right side, but decreased slightly on the left side; on the whole, the tumor was slightly larger at this time than it had been when we started, and the only feature about the case that encouraged me to continue the treatment was the marked improvement in her general condition.

She then went to her home in Massachusetts for a short visit and when she returned there was noticeable a decrease in the size of the tumor of about 20%, which had rendered it necessary for her to shorten her waist bands and the fronts of her skirts to keep them from dragging on the ground.

From June 17th to September 3d, a period of two months and a half, she received thirty-one roentgenizations. Her general health continued to improve and the tumor steadily decreased in size, and at the end of this period she resumed her occupation of teaching school, which had been interrupted for about a year and a half.

To make a long story short, the whole treatment of this case extended over a total period of two years and three months, during which time she received one hundred and thirty-six applications of the Roentgen ray, more than one half of which were given during the first eight months. She received her last roentgenization on May 20, 1904, at which time no trace of the tumor was discoverable nor had it been, according to the testimony of her family physician, for several weeks previously. The fact of its disappearance at this time was confirmed by examination by Dr. C. A. Bevan, of West Haven, and in July by Dr. W. B. Coley, of New York, so that this patient has been perfectly well, without any evidences of recurrence, for more than two years. At the present time she weighs more than she has ever weighed in her life before, is apparently perfectly well in every way, and has taught school uninterruptedly since September, 1902.

This patient came down here from Massachusetts yesterday and submitted to examination last evening by Drs. Carmalt, Verdi, N. R. Hotchkiss, Eliot, and Bevan, of New Haven; Brown, of Danbury; and Overlock, of Pomfret. She was also examined yesterday on her way here by Dr. Maurice H. Richardson, of Boston. All of these gentlemen confirmed the findings noted above. I had hoped that she would be here today, but her courage was not quite equal to appearing before the Society.

These cases justify the bald statements that cancerous processes are amenable to roentgenotherapy, whether superficially or deeply located, and that it is capable of accomplishing beneficial results in cases of so severe a type as to present absolutely no hope of relief even, under any management.

This must not be understood as implying, however, that all cases of malignant disease will respond happily or with equal readiness, even when the highest degree of technical skill and the dictates of the ripest experience are invoked in the administration. Individual idiosyncrasy, as regards protoplasmic vitality and the strength of the tendency toward the normal development of cell types constitutionally inherent in different patients, enters the problem with great force. In some persons, cell vitality is at so low an ebb that but little disturbance is required to produce a widespread aberration from the normal cell types; in others, it is so pronounced that very large degrees of such irritation as usually induces malignant cell growth, are undergone with impunity. These same principles apply as regards the amount of corrective influence required to restore normal conditions in any individual case. But the cardinal fact that the beneficent power is inherent in the ray, remains demonstrated, and it is our future function to ascertain, and, if possible, gain control of these extraneous factors and conditions which introduce the element of uncertainty into the treatment of the individual case.

Roentgenization would appear, then, to be destined for a prominent rôle in the future therapy of cancer, and the next thing to be ascertained, viz., definition of that rôle, at once brings up for consideration the question, "Shall the ray be relied upon alone, to the exclusion of the knife, or shall it be applied in conjunction therewith, and if so, how?"

As regards the first part of the question, clinical experience has shown that it is justifiable, and usually preferable in judiciously selected cases, to rely upon roentgenization to the exclusion of the knife in cases of superficial epitheliomata, involving only the external skin. The proportion of successful results is just as large (some operators claim that it is larger) as that attainable with the knife or caustic pastes, the cure is just as radical, and the cosmetic results are much better. An additional advantage is that if recurrence takes place it is usually permanently amenable to a further course of radiation, whereby the extensive removal of tissue is avoided. I will say, in passing, that malignant processes involving mucous membranes do not respond as kindly to roentgenization as do those which are confined to the external skin.

In inoperable cases, wherever situated, roentgenization must of necessity be relied upon to the exclusion of the knife. That it merits consideration in even the most desperate of these, however, is demonstrated by the abdominal case already described.

As regards the second part of the question, clinical experience has shown that when the growth is deeply located or large in size, a much larger proportion of satisfactory results can be obtained by combining the knife and the ray, than by relying upon either alone. The logic of this proposition is as follows:

First, when a large mass of malignant tissue disappears under roentgenization, its disappearance is usually accompanied by a variable degree of general systematic toxæmia, which has been known to be severe enough to kill the patient of itself, and which is always liable to impair general or local metabolism sufficiently to greatly interfere with, and sometimes entirely defeat the restoration of normal conditions. Its removal by the knife, *en masse*, eliminates this danger.

Second, when the disease process is deeply located, the intensity of the influence which it is possible to exert upon the lesion is so lessened by the passage of the ray through the overlying tissues as seriously to impair its remedial effect. Removal of the lesion by the knife confines the work demanded of the ray to the destruction of microscopical, outlying foci of malignancy, whereby the probability of a favorable outcome is greatly enhanced.

Whether or not a cutting operation for cancer should be preceded by roentgenization, is still a mooted point. In its favor is the probability that limitation of the process can be effected through inhibition of the growth of malignant cells at its periphery, thereby increasing the probability that complete removal can be attained. On the other hand, grave impairment of the reparative functions of parts thus treated has been noted, and the loss of time involved in delaying the operation may at times be a serious matter. There is so little unimpeachable evidence that well-applied roentgenization has ever been instrumental in actively disseminating a malignant process, and so much in opposition to this theory, that this part of the subject is hardly considered to merit discussion among present-day roentgenotherapists, and we can dismiss the subject without further mention. As regards preoperative radiation, therefore, the conditions surrounding each individual case must determine its management.

Roentgen operators are unanimous, however, in the belief that every ablation for cancer should be immediately followed, as a routine measure, by roentgenization, which belief is based upon the following:

First, a large proportion of recurrent malignant growths do not respond kindly to roentgenization, perhaps because of the increased malignancy with which operative interference seems to imbue some cancers, notably sarcomas.

Second, if roentgenization is delayed until recurrence is manifest, the process may then have become so widely disseminated as to preclude the possibility of benefit from radiation.

Third, if the affected area is radiated immediately after radical extirpation of the lesion, the degree of remedial (destructive?) influence demanded of the ray will be limited to such as will be necessary for the elimination of microscopical foci of malignancy, whereas, if recurrence is awaited, the remedial influence required will be much greater because the lesions will be much larger and better developed, and the degree of increase demanded may be so great, especially when deeply-located structures are involved, as to be impossible of attainment. Under such circumstances we would be confronted with a condition which might have been prevented

had we acted promptly, but which our remissness had allowed insidiously to develop and compass the destruction of the patient.

Fourth, we know that in a certain proportion of cases treated by a cutting operation alone, recurrence will not take place and the cure will be radical. On the other hand, we also know that we never can assure any one patient that recurrence will not take place in his case, and we are perfectly certain that recurrence will declare itself in a large proportion of all cases. If immediate post-operative roentgenization is omitted in any one case, that may be the very one in which we shall encounter recurrence, and it is highly probable that had we applied the ray immediately after the operation, the accident would have been prevented. By roentgenizing every operative case therefore, we are assured of having exerted every effort for the relief of the patient, and that we have saved all of our cases that it was possible to save.

Fifth, it is imperatively incumbent upon us to apply any measure which has the power to destroy or inhibit malignancy, to the task of lessening the proportion of post-operative recurrences; that the Roentgen ray manifests such a power, is proven beyond a doubt, and the clinical experience of those who have thus employed it, *with a correct technique*, has amply confirmed the validity of this contention.

The consensus of expert opinion today, then, may be broadly summarized as follows:

First, in superficial malignant lesions involving only the integument, roentgenization is the procedure of election.

Second, in operable lesions more deeply located or involving mucous membranes, the advisability of combining ablative surgery and roentgenization should always be earnestly considered, and such combination will give the best results in the majority of cases.

Third, a course of Roentgen ray applications should follow every cutting operation for malignant disease, as a routine measure, and sometimes, perhaps, should also precede the operation.

Fourth, roentgenization should be persistently applied to all inoperable cases as long as the patient shows any signs of response, however slight.

By far the most important factor which is active today in determining whether the results of roentgenization shall be satisfactory or the reverse, is the degree of knowledge possessed by the operator concerning Roentgen ray phenomena, both physical and clinical, and his ability to utilize this knowledge practically; in other words, the technique. The difference between the results of intelligent, scientific, efficient roentgenotherapeutic technique and the reverse, resembles very closely that which would obtain between appendectomies performed in a tenement house kitchen without antiseptic precautions by a second-year medical student, and the same operation performed in a well-equipped hospital by a master of surgery. The subject of technique, however, is too specialized in character to admit of discussion in detail at this time, and I shall not enter upon it further than to call your attention to the following facts which have more or less vital bearing thereupon:

First, there are electrical conditions generated in the neighborhood of an excited Crooke's tube, and perhaps other radiations than those of Roentgen emanating therefrom, which probably play a considerable part in the physiological influence exerted.

Second, the Roentgen radiation from any Crooke's tube, whether of high or low vacuum, is composed of rays of varying degrees of penetrative power present in varying proportions as regards quantity.

Third, only those rays which are absorbed by the tissues, *i. e.*, reach, but do not penetrate through them, effect physiological modification thereof; hence an operator must know which rays are best adapted to the particular pathological condition under treatment and be able to so manipulate the generating apparatus as to obtain them.

Fourth, the penetration of the Roentgen radiance generated by a given Crooke's tube, is directly modifiable by the amount of current used to excite it and by the introduction of resistance (spark-gap) into the tube circuit. This latter factor is especially effective when a static machine is employed as the tube excitant, so much so, indeed, that a tube so low in vacuum as to give off no appreciable Roentgen radiance at all without spark-gaps, can be made to deliver rays of high penetrating power by their use.

Fifth, rays of different degrees of penetrating power can be filtered out of the emanation from an excited Crooke's tube, by placing in its path various substances, such as sole leather, plain or impregnated with normal salt solution, when it is desired to eliminate those rays that are absorbable by the skin, aluminum when it is desired to eliminate the so-called "soft" rays in general, silver when the rays of high penetration constitute an undesirable factor, etc.

Sixth, volume, as well as penetrative power, constitutes an important element in the physiological influence and therapeutic efficiency of this force.

Seventh, volume is directly proportional to the amount of current traversing the tube, and indirectly proportional to the degree of tube vacuum.

Eighth, the intensity of the X-ray varies inversely as the square of the distance, hence, the location of the source of the rays (anode), as regards its distance from the lesion, and determination of the time duration of the exposure are factors of the first importance. Fortunately these can be calculated mathematically and are easy to ascertain; unfortunately they are as much neglected by the average exponent of roentgenotherapy as they are easy of attainment.

Ninth, it is necessary that the quality and quantity of the rays therapeutically administered, should be under intelligent control and susceptible of measurement, and here we are confronted with a grave difficulty. The penetrating power can be satisfactorily determined by Benoist's penetrometer, and Pfahler's modification of this instrument (*Archives of Physiological Therapy*, June, 1906), has rendered it entirely safe as far as injury to the operator is concerned; but no practical instrument has yet been devised which will measure ray volume or quantity with any degree of accuracy, and volume is of as much importance in this equation as penetrating power. The operator is therefore obliged to rely upon his experience with his own individual tubes for his estimate of their physiological and therapeutic efficiency, this knowledge of one tube is of no value as regards determination of the index of any other, and every tube is an unmodified interrogation point to any radiologist who has not used it before.

It is apparent, from the foregoing, that although a man may be an excellent surgeon or an erudite physician, these qualifications, of themselves, do not by any means constitute him a competent roentgenotherapeutist or justify him in wholesale condemnation of this remedial measure, because of unfortunate results, or a lack of good results which may have come under his observation from roentgenization as it is commonly applied at the present time. The attainment of satisfactory results necessitates on the part of the operator, a good knowledge of the physical properties of the ray, a broad and comprehensive familiarity with its clinical behavior, and an intimate knowledge of the possibilities and behavior of his individual tubes and generating apparatus. These qualifications are, unfortunately, exhibited by but few of those who are roentgenizing pathological conditions today, a generous estimate placing their number in the United States at about fifty, and it is a matter of wonder that there are so many happy results and so few accidents. It is also not to be wondered at, that the vast majority of surgeon-radiologists are much better surgeons than radiologists, but this unfortunate fact is responsible for a very large proportion of the sweepingly pessimistic reports of cases from high sources, that have been ineffectually roentgenized.

Due appreciation of these facts is gradually permeating the general professional mind, however, and inducing Roentgen operators to fit themselves properly by conscientious, special study for their work, and the time is not far distant when the beneficent potentialities of this remedial agent will be accorded the high rank they deserve in the management of this most distressing and destructive ailment.

Lacerations of the Parturient Canal, their Prevention and Immediate Treatment.

NORTON R. HOTCHKISS, M.D., New Haven.

It is not the purpose of this paper to institute new thoughts or ideas on this subject, but its intention is to emphasize the necessity of the proper observance of all injuries to which the parturient canal is subjected. We have undoubtedly reached the position in modern methods of asepsis and technique where it should be a disgrace to the obstetrician of today to leave many lacerated cervixes and perineï to the after care of the gynæcist, to say nothing of the almost permanent invalidism of the patient, not only as to the pelvic organs and generative canal, but also to the one great bane of all physicians, the nervous and neurasthenic conditions of these patients, despite all the success gained in a reparative way by later operations. An inspection of a great many cases repaired by the gynæcist will show perfect union and function of the perineum and uterus, but still a train of nervous symptoms follow. We have only to revert to the fact that before these cases met with injuries in their parturition they were healthy and normal individuals as respecting their nervous history.

So it becomes a duty which is more and more necessary that the obstetrician of today should be at least skilled enough in his profession to intelligently care for these cases. Indeed, it becomes a matter of serious import as to whether the ordinary midwife, as licensed by our State Boards, is perfectly qualified to attend to this particular phase of obstetrical delivery. One might say that it is all right for the midwife to attend a case so long as she is able to intelligently detect the presence of these injuries so as to call upon a surgeon to repair them. As a matter of fact, how many of these midwives do detect injuries? How many cases are surgeons called upon to repair immediately? It is my impression

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that very few of these cases are attended immediately by surgeons. It is only after the train of symptoms begins to develop that they reach the hands of the surgeon.

While the licensed midwife comes in for a share of the responsibility in these cases, it is still worse to find that a great many reach the surgeon that were attended by reputable doctors, and apparently without any knowledge on the part of the patient or even the doctor that an injury occurred at delivery. Inquiry will often elicit from these patients the information that the attending physician did not even examine them after the delivery; how, then, can he state that his patient went through a successful parturition?

A consideration of lacerations of the cervix uteri often, and in fact with very few exceptions, can be laid to injudicious care on the part of the attending physician. Fortunately one of the acts of Nature permits of a sufficient amount of elasticity of the cervix so that rarely an abrasion occurs, if let alone. It is to the credit of the midwives that few injuries to the cervix result, for the plain reason that they let it alone. On the other hand, the doctor, to hurry up the process of delivery, either by the use of drugs, or by mechanical interference in too early rupturing of membranes, or by manual and irregular dilatation of the cervix, or by the use of forceps before dilatation is complete, becomes the injudicious factor in the production of a great many cervical tears. If this first stage of labor is protracted and tiresome to the patient, it would be far better to give an anodyne for rest to the patient, than to use the hurrying process, because the same slow influence at work in the first stage will only be exaggerated in the second stage. On the other hand, a great many deliveries can be shortened and their cervices can be aided in the process of dilatation by a gentle stretching rotatory manipulation with the index finger, or possibly with two fingers. If a condition of a soft dilatable cervix does not exist, it is far better to leave the process to nature. Later, as dilatation is almost but not quite complete, as the occiput engages in the superior strait, it is often recommended by authors to push up the rim of the cervix over the occiput. This in the writer's opinion is one, if not

the prime factor in small cervical tears; it is so frequently *forced* up over the engaging occiput that a tear is bound to result. Here again a gentle rotatory dilatation with the finger will assist without forcing the stretching at one point to ride over the occiput. Emphasis cannot be put too strongly on the fact that forceps should *never* be put on until dilatation is complete, for the reason that each blade of the forceps in a high forceps application stretches the cervix unequally. A little stream of blood will often establish the fact that a cervical tear has occurred even before the first strong traction has been made; still the obstetrician is not content to wait, but pulls and pulls on his forceps until not dilatation but tear enough has been produced to permit the head to escape the cervix. Afterwards the doctor contents himself with the thought that "it was a hard instrumental delivery, and something must tear in these cases," when in reality it was his injudicious and untimely use of the forceps.

Granting that a tear of the cervix has occurred, opinions differ as to the advisability of repair. Some even go so far as to state that successful primary union rarely occurs. The fault usually lies with the technique; first, improper apposition of the torn edges, and second, on account of the relaxed and usually œdematous condition of the cervix the stitches are placed so loosely that union does not take place.

Every torn cervix that can be detected easily with the fingers should receive surgical treatment at once. There is only one contra-indication, and that is hemorrhage with its resulting shock; but even this condition may have righted itself within twenty-four or thirty-six hours, when even then it is proper to repair the cervix. If, however, the hemorrhage should be from the cervical artery, then it becomes absolutely necessary to at once ligate or stitch, or both, as necessary. Repair of cervix is best done in the dorsal position, with the hips over the edge of the bed, the legs flexed and held by assistants, not necessarily trained. A perineal retractor is usually necessary. Tenacula placed in both lips of the cervix, and drawing down will usually stop all uterine bleeding. Two or three stitches in each tear is usually all that is necessary. An anesthetic is usually not necessary—in fact the patient hardly ever feels the pain of a cervical stitch. Chromi-

cized catgut is to be preferred, but the stitches must be tied tightly on account of the usual œdematous condition of the cervix. Ten to fifteen minutes is all that is necessary.

If union does not result, you have had at least the satisfaction of having made the attempt, which is in itself a great satisfaction to the patient in case she later has to resort to the help of the gynæcologist.

Usually after the completion of the third stage of labor an examination will reveal a widely dilated, flabby cervix, which, if properly moulded together, would aid in the primary union of small tears not deep enough to be stitched.

A great many of the principles applied to the proper management of the first stage of labor, applies as well to the management of the second stage or the perineal delivery, but here we find that the physician in his case exercises a limitation in a degree if not entirely a prevention of perineal tears, while the licensed midwife increases her ratio of injuries by lack of proper care. The older writers told us that we should "support the perineum". No statement ever made was more erroneous than this, if applied as was literally meant in their teachings. As a matter of fact the maxim should have been "delay the head". The continued pressure of the hand on the already stretched perineum would only tend to further rip the tissues. Here again we have a fundamental principle of patience.

It is the experience of the writer that it is far safer to the perineum to deliver the child with the patient lying well over on her left side, with the knees fairly well flexed against the abdomen and supported either by the pillow or the hand of an assistant. In this position the head can be delayed more easily until such time as the perineum can be safely stretched to permit of the exit of the child. Certainly in this position rectal cleanliness, antiseptic bathing of the vulva, perineum, and rectal region can be carried on more safely and successfully than in the dorsal position. The writer has not used the dorsal position in any delivery for the past six or seven hundred cases, except in breech-delivery.

Fortunately nature again permits a satisfactory dilatation of

the perineum if allowed to do so slowly. The frequent bathing with hot antiseptic solution aids in this. Frequently it happens that the head remains on the perineum when it only requires a slight effort to deliver. It is frequently advised at this stage to insert the index finger in the rectum to aid in the expulsion. The writer mentions this procedure only to condemn it, first, because of the danger of infection (for that finger will not again get properly cleansed before the completion of the third stage); second, because it is absolutely unnecessary, for there is no case in which, with the patient on the side, it is not possible to gently push back the perineum over the head with less danger to the perineum; and thirdly, because this procedure in itself only tightens the girdle more and makes tearing more imminent.

There are certain cases where the attendant is absolutely certain that there will be a perineal tear; in such cases it is the practice of the writer when the head is emerging during a contraction of the uterus, to insinuate one blade of a pair of straight scissors between the head and the perineum, and, cutting such amount of perineum as is necessary, to conclude the delivery. This incision is made in the median line and not on the sides or sulci as suggested by some authors in the operation of episiotomy. It becomes a surprise at times to see what a small amount of cutting is necessary to deliver the head, it never becoming necessary to cut through the sphincter muscles, but only including skin, fascia and mucous membrane. By this method you have an absolutely clean unragged surface with the certainty of being able to approximate the edges. The writer has adopted this procedure in a great many cases, and has yet to see one that did not perfectly heal by first intention.

The lateral operation of episiotomy is not to be desired for the reason you make two incisions, and that you are more liable to cut through the transverse perineum muscles and other important structures you are desirous of saving.

The same principle is adapted to forceps deliveries — always in the side position, with the precaution of always removing both blades of the forceps before the final extraction of the head.

If, however, a laceration has occurred, it becomes only a question of the proper apposition of the torn area. trimming ragged

edges and especially uniting with buried catgut the torn ends of the sphincter muscles if they be contracted, which is usually the case. If the rectum is involved the stitches should be placed deeply to include the sphincter muscle, and closely enough placed so as not to leave a dead space in any part of the laceration. The rectum itself should be united from within its calibre by catgut sutures, which only include its mucous membrane.

Any suture material may be used for the vaginal or perineal laceration; chromic or plain catgut if a running suture, or silk-worm gut if interrupted are preferred. If the laceration is not deep, perfect union will follow ordinary catgut; silk is used by some with entire satisfaction. The left lateral position is always employed by the writer for suturing.

The after treatment of these cases is of prime importance. The rectum should never be permitted to become packed, for the pressure of faecal masses would seriously interfere with deep union. The bowels should be opened on the following day by some laxative, preferably a saline, and should be kept loose or liquid until complete union. Stitches may be removed in from six to ten days. It is not necessary to catheterize such patients, but irrigation, preferably of a creolin solution poured from a pitcher while the patient is in a dorsal position on a bed pan should immediately follow each act of urination. If stitch infection should show itself, the earlier the stitches are removed and surfaces cleansed the better, for even then there is a chance of permanent union.

One word should be said in a general way with reference to the immediate preparation of a patient for delivery, and that is that the rectum should always be emptied by enemas before delivery. This is very frequently neglected by nurses, and thus constant soiling takes place. At any rate, if it has not been done before delivery, it should be done afterwards, and before any repairs of lacerations are made.

DISCUSSION.

Dr. Henry G. Anderson (Waterbury): Mr. President and Gentlemen: I have very little to say further in connection with this paper than what has been already said. I would simply like to emphasize the point

the Doctor makes about making an attempt at immediate union. At the Women's Hospital we found a very large percentage of cases of lacerations of the perineum were cases in which no attempt whatever had been made at primary union at the time of delivery. Dr. Emmett used to talk to us a great deal about breaking the old scars. He said there was simply the fascia and a muscular plane. When these were torn, as in any hernia, it should be thought of simply as a muscular plane, and so repaired. The operation, devised by Dr. Clement Cleveland, which was very successful there, and which I heard Dr. Emmett state, aside from his own operation, was the best one that had ever been devised, was especially adapted to primary tears, although it was used as a secondary operation, too. The suture was a double one, being inserted on one side a little below the center and going to the center and down, making a loop, and emerging opposite the point of entrance. The second suture, if one was needed, took in the upper part of the tear and made four sutures, practically, with two ties, or two with one knot. It was done in a very few moments, and it brought the whole lacerated surface together. If the rectum was torn it could be repaired, first with the rectal sutures, as has been described, or, if the sulci were torn, the other sutures could be put in above, or another figure of eight, one on each side, would close that. The whole operation could be done very quickly. There was union in practically every case and the after results were perfectly good. In the secondary operation it did practically as well.

The question of supporting the perineum, I think, can be helped a good deal by supporting laterally, not pressing forward, but from the side to relieve the tension that is there. I think it was Dr. Shrady who said that if the perineum was not such a support to the physician, the physician would support the perineum more. (Laughter and applause.)

Dr. Edward W. Smith (Meriden): Mr. President, as Dr. Anderson has said, there wasn't very much to say after Dr. Hotchkiss finished his paper. The one thing I think to be emphasized is the necessity of waiting for the cervix to dilate. In most of the cases in which I have been called into consultation to use forceps by the younger men of the profession, I usually found the cervix was only half or two-thirds dilated, and that an hour or two of longer waiting was all that was necessary in order to bring about a favorably delivery in these cases. I didn't hear the whole of his paper, but Dr. Hotchkiss has said but little in regard to vaginal treatment, that is to say, the cases where there is a contracted and flat pelvis, and where the vagina itself is torn in connection with the perineum. I think the general practitioner should be prepared in a certain class of cases to be ready with his speculum to repair injuries to the vagina, if he knows the case is one where the pelvis is narrow or flat, and where there is likely to be a hard delivery. My own preference is to have emergency tubes, with a number two catgut, chromacized, and a full curved needle. In that case you are ready, and you know your needle is all right and not rusty.

Then the physician is ready to take two or three stitches in the vagina or the perineum, wherever it is necessary. In repairing the perineum, my own preference is to begin on the vaginal side, taking a pretty deep bite in the tear, or deep enough so as to bring the muscles in, and then run continuous stitch down through the perineum on the outside. One good stitch on the inside is worth two or three on the outside. In regard to supporting the perineum, I remember some years ago, in New York, the old Professor, Dr. Emmett, said, "Just go against the head. I have stood with all my weight against the head and never touched the perineum; just hold the head back until the perineum is dilated."

Dr. Seymour L. Spier (New Haven): Mr. President, I think that with the young practitioner, the laceration of the perineum, especially in the poorer classes of patients, where they cannot afford to have a nurse or attendant who possibly understands irrigation after urination, is the biggest bugbear we have for perfect results. I have three cases in mind now where the sulci were both lacerated and a partial rectal tear was observed, which were sewed up carefully and much care was taken, yet, nevertheless, the sulci became infected and the stitches tore out. I found that by the following method, although I didn't get perfect results, yet it facilitated the results after the stitches were in place. I left a jar of one per cent. carbolyzed vaseline, with instructions for a half-way cleanly person in the household to smear over the line of sutures as nearly as she could after each urination. This seemed to me about the only way to protect those surfaces from infection, which always lurks in the vagina, and I have had more or less satisfaction since I have tried this method.

Dr. Norton R. Hotchkiss (New Haven): Mr. President and Gentlemen: There is very little to add. I was in hopes something would be brought out for discussion about which I could say something more. I simply want to emphasize the fact which one of the doctors stated, that it is so frequently seen in these cases that a doctor called in consultation to use instruments, finds the identical condition referred to, that is, the cervix only half open, half dilated. It seems to be the feeling among a lot of the younger men that forceps are indicated so early. Undoubtedly the feeling is influenced by the action of the people, of the mother, and more particularly the observers, that they feel forceps ought to be used. I have found it exceedingly hard sometimes, to have the people understand that it is not a proper time to use the forceps. There is one thing more that I wanted to say in regard to taking deep stitches, when a deep laceration has taken place. It is necessary, in putting in a silk worm gut suture, which is to be preferred, to take a deep stitch. Of course care should be taken not to permit that stitch to go into the rectum, but it is necessary to have a deep wide stitch taken so that the constriction will be less, and also that the stitch itself will not come out and form a pocket, which undoubtedly could be easily done if the patient is not in good position and proper light is not available.

Dr. Smith has referred to vaginal tears. We have them extending sometimes well up, usually made by the blade of the forceps adjusted so that the side of the blade comes out and grips the tissue by improper constriction. I have had reasons to think and know that it has been done in cases of mine, and I have seen it done in others. These vaginal tears usually heal themselves. If there should be great difficulty in getting the patient well sutured, there is some satisfaction in knowing that these will usually heal themselves. Sometimes there will be the surface of the vagina that will be split, not cut through, but split towards the rectum. It may be a flap half an inch, perhaps an inch. Those cases should always be sutured. If too deep and bleeding, they should be sutured anyway; but the special reason why these should be sutured is for the after condition. If a broad raw surface is left to heal, there will be usually a cicatricial tissue that will always be tender and painful to the patient for months afterwards, and which is apt to be the point of infection. As we examine the case later, we find there is a thickened broad ligament on one side or the other and a great many times those cases are due to the connection of the lymphatics which go to the broad ligament from the vicinity of the lateral vaginal tear.

The Relation of Typhoid Fever to Pregnancy and the Puerperium.

OTTO G. RAMSAY, M.D., New Haven.

In considering the relationship of any of the intercurrent diseases to pregnancy, there are two points of view from which we must study the condition, namely, what may be the effect of the disease on the pregnant condition, and how does the pregnant condition affect the disease. Besides this, too, the relationship to pregnancy, to labor, and to the puerperium, must all be considered, as they are separate states.

It will shorten materially any discussion if we review briefly to pregnancy, before going into details as to the particular results of typhoid fever.

In the first place, is the foetus directly infected by the microbe which causes the infection in the mother? That this is not always the case has been proven for most diseases, though it is undoubtedly true that in a certain small proportion of pregnant women, there is direct infection of the foetus by the infecting organism. That it is not always so must be due to the protective influence of the placenta, and it appears that the normal placenta has usually the power of retaining organisms in the maternal circulation. The reason why sometimes the power is lost is not yet clear. The young placenta is apparently not so strong in this direction as the placenta nearer term, and, for instance in typhoid fever, most of the cases in which it has been possible to cultivate bacteria directly from the foetal tissues were in cases of miscarriage in the early months. Apparently the virulence of the individual organism does not account for the cases of direct foetal infection, as some of the cases in which the organism has been recovered from the foetal tissues were in a mild type of the disease. Some writers

on the subject claim as the explanation of the passage of the organism, a less resistant area in the placenta, due to traumatism or to disease. This is as far as our knowledge goes, and we must rest for the present content with the certainty, that as a rule the placenta protects the foetus from direct infection, though this is not always true, as evidenced by the fact that organisms of the maternal disease have been isolated from the foetal tissues.

Besides the direct infection by organisms there are several other things which must be considered. For instance, what may be the effects of the toxins which are liberated during the diseased state upon the foetus? That these, in many cases, enter the foetal circulation is evidenced by the fact that in typhoid fever, for instance, a Widal reaction with the foetal blood is much more commonly found present than the organisms themselves. These toxins, then, are the probable cause in some cases of foetal death.

Another condition which must probably influence the foetus is the high temperature so commonly found in the infectious diseases, and this without doubt is a cause of foetal death. Whether the death is due directly to the high temperature acting on the unaccustomed foetal metabolism, or whether the high temperature acts unfavorably on the brain or other vital centres is not yet determined.

Finally the high temperature, besides its direct action on the foetus, acts unfavorably on the uterine musculature, the mucous membrane, or on the uterine spinal centres, increasing uterine irritability and causing a premature ending of the pregnancy, sometimes when the child is apparently not at all affected; often, however, children born living during the course of an infectious disease show signs of being at least influenced by the disease, or by the toxins, evidencing this by high temperatures or various cerebral or visceral disturbances which may cause death or which may, if the child is a resistant one, be overcome by careful attention to feeding, stimulation, etc.

To review briefly these general statements, we find that as a rule the placenta has the power of prohibiting the passage of organisms from the maternal to the foetal circulation; though occasionally the organisms are able to pass the placental wall, possibly

as a result of disease or traumatism. That probably the toxins of the disease are able to pass the placenta more easily and are the cause of foetal death in many cases. Also that the high temperatures influence unfavorably the life of the child and greatly increase the chance of premature emptying of the uterus.

So much for the general question, and we may now approach the subject of the paper. In the first place, as to the influence of pregnancy on the typhoid infection. Does pregnancy exert a protective influence against a typhoid infection? This was formerly accepted as a fact, and there is still a legend, at least among the laity, which affirms it to be true. It is difficult, certainly, to get any definite statistics on the subject, but in the epidemics which have occurred at various times, in which the relation of pregnancy to the infection has been considered, it has been found that about an average number of pregnant women were affected by the disease, and it seems to me that it is probable that the idea grew out of the fact that pregnant women are more protected by their pregnancy and less likely to be outside of their homes, thus lessening the chance of the sporadic case, while in epidemics they are open to the same chance as the rest of the population and suffer to the same average extent.

Pregnancy appears to affect the course of the disease but little, and the mere fact of a woman being pregnant does not seem in any way to increase the virulence of the infection. Naturally the prognosis must be slightly more grave, as we have to add to the disease itself the chances of miscarriage or premature labor, with the possibility of severe hemorrhage lessening the resistance, and increasing the chances of infection; but it is surprising many times to see what little general effect follows the emptying of the uterus in typhoid fever and how well the patient bears the shock of the labor, with its attendant handling or hemorrhage.

From the other point of view, namely, the effect of typhoid fever on pregnancy, the picture is somewhat different, as undoubtedly it exerts a very serious influence on the continuance of pregnancy. Taking the statistics as a whole we find that from 45% to 55% of pregnant women suffering with typhoid fever empty the uterus prematurely. It has also been found that the

chances of miscarriage during the earlier months is greater than in the later ones. This tendency to miscarriage is evidently due to several conditions. In the first place, a certain proportion, small possibly, is due to the direct invasion of the foetal tissues by the typhoid bacillus with, as a result, foetal death and extrusion. Another reason, probably, is the effect of the toxins or of the continued high temperature on the foetus, causing its death.

The most important cause, probably, for the interruption of pregnancy, however, is the effects of the toxins or the high temperature on the uterine walls, either the musculature or the decidua, or on the uterine centres in the spinal chord. There is undoubtedly, during the course of the disease, an increased irritability of the uterus and there is probably in addition to this a tendency to decidual changes. This has not been definitely proven, but reasoning by analogy we find, for instance, in some of the other infectious diseases, a distinct hemorrhagic endometritis deciduae, and it is certainly true that in typhoid fever in the non-pregnant woman there is frequently slight uterine hemorrhage, showing the tendency of the disease to attack the uterine mucosa.

At any rate, we know that typhoid fever occurring during pregnancy gives a bad outlook for the continuance of the pregnancy and that a warning as to the possible outcome should always be given. As to the means which should be taken to prevent this occurrence, there is unfortunately but little that can be done. These cases are treated just as one would treat the general patient suffering from the disease. Possibly cold baths might be contra-indicated, and I should be inclined, during the height of the disease, to use opium for its action on the uterus. Also special care should be paid to the elimination of toxins by the use of fluids in plenty, and by care of the bowels, as we consider them the cause of foetal death many times. Besides this as complete quiet as possible should be obtained for our patient and the possible delirium should be combatted by appropriate remedies, small doses of hyoscine, for instance, being recommended. My own individual experience has been, I am glad to say, small in these cases, but I have been struck with the impossibility of giving any definite prognosis based on the intensity of the disease, and I have also

been struck with the tolerance to the disease in the later weeks of pregnancy; one patient, for instance, beginning her typhoid at about the 35-36th week and going to term, being delivered at the proper time of a living, healthy child, which, strange to say, never showed a Widal reaction, though at the time of its birth the mother was running a typical fourth week temperature and showing a typical Widal reaction.

In regard to the question of inducing abortion during typhoid fever, with the possible idea of either lessening the severity of the disease or of carrying the woman through the additional shock of the miscarriage when she is in good condition to stand it, there seems to be an almost completely unanimous opinion that it is not good judgment.

The effect of typhoid fever on labor appears to vary, depending on various conditions, as for instance, primiparity, the time of the disease and the general condition of the patient. I have had the opportunity of following only one case of full term labor in a typhoid patient, the one to whom I have already alluded—this woman was a multipara, her typhoid infection was not an extremely serious one and she was in good condition at the time of labor, which went on normally. The placenta gave no trouble nor was there any serious after flow. The strange thing to me was the fact that her temperature, which up to the time of her delivery was running pretty constantly around 102°, dropped to normal and remained there.

In the cases of abortion or premature labor which I have seen, the labor has not been very different from the usual type, and this I have thought due to the fact that the uterus usually emptied itself during the second or third week of the disease, before the exhaustion incident to its long continuance has had a chance to manifest itself. I can imagine however a no more desperate condition than a labor in a primiparous woman in the later stages of typhoid fever, and in such a case it would seem to me that we should be prepared to interfere at any time, and I should also be inclined in such a case to give a gloomy prognosis as to the final outcome.

The relationship of typhoid fever to the puerperium is interest-

ing chiefly from the difficulty experienced in differentiating it from puerperal infection. I have had the opportunity of following several cases comparatively recently in the hospital and probably a brief citation of one of them will bring out in the clearest way the points of interest.

Mrs. X., aged 29, ii para, was delivered normally at the end of her pregnancy of a living child. There was a slight perineal tear, which was closed with several sutures. On the second day after the delivery the patient's temperature began to rise, on the third day reaching over 100° F. Daily after this the temperature reached a high point. Cultures from the uterine cavity were negative, and finally, after a week or ten days had elapsed, rose spots appeared and a typical Widal was found.

This woman was delivered normally and began to show a regular rise of temperature in the early days of the puerperium. Cultures made from the uterine cavity were negative, and at the usual time rose spots appeared, the Widal reaction was found and she ran a typical typhoidal course. On looking back at such a case after it is all over, it seems a simple matter to make the diagnosis, but in the early stages before any of the diagnostic signs of the disease have appeared, the condition may give rise to much anxiety before an accurate diagnosis is fully made. I must say that the cases I have seen did not simulate at all a severe type of puerperal infection, but reminded one rather of a woman suffering with a post-partum infection due to the gonococcus.

DISCUSSION.

Dr. Francis N. Loomis (Derby): I haven't very much to say on the subject, my personal experience having been confined to only one case. In that case the woman was three months pregnant when she was taken with typhoid, and went through the disease as if she had not been pregnant at all, without the slightest complication. When I attempted to look the matter up some time later, I found that nearly all the authorities contented themselves with saying puerperal women were not apt to have typhoid fever and then they quoted statistics which differed so, that the conclusion to my mind was that the authorities didn't know very much about it. The percentage was 70% in one case and 24% in another.

I had one interesting case, and the Doctor's paper suggested my referring to it. I had a case where the mother was in the midst of whooping cough when she was confined. The child had a distinct whoop within three

days after it was born, and it only lived some eight or ten days and died of bronchitis that developed during the whooping cough.

Dr. Otto G. Ramsay (New Haven): I have nothing special that I care to add. Dr. Loomis has called attention to the same fact that I was struck with in looking up the statistics, i. e., their great variability. I tried to explain it by the difference in the epidemics, but I don't know whether that is the true explanation or not.

PAPERS READ AT COUNTY
MEETINGS.

Papers Read at County Meetings.

HARTFORD COUNTY.

October 18, 1905.

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|----------------------------------------------------------------|--------------------------|
| President's Address | Dr. Theodore G. Wright |
| Essay | |
| Enlargements of the Testis and Epididymis | Dr. Frederic B. Willard |
| Essay | |
| Commitment of Insane Persons | Dr. Edwin A. Down |
| Essay | |
| The Work of the Mayos | Dr. Oliver C. Smith |
| Essay | |
| Infections of the Liver secondary to Lesions of the Alimentary | |
| Tract | Dr. Everett J. McKnight |
| Essay | |
| Recent Neural Surgery | Dr. Frederick T. Simpson |
| Essay | |
| Minor Points of Major Importance in Surgery | Dr. Ernest A. Wells |
| Relation of Cases | |
| Acute Suppurative Synovitis of Knee Joint | Dr. M. M. Johnson |
| Report of a case of Renal Calculus Nephrotomy | Dr. John B. Boucher |
| Removal of the Supra-orbital, Infra-orbital, Inferior Dental, | |
| and Gustatory Nerves for Facial Neuralgia | Dr. M. H. Gill |

April 3, 1906.

- | | |
|-------------------------------------------------------------|--------------------------|
| Dissertation | |
| Management of a Few Common Fractures | Dr. Edward L. Whittemore |
| County Report | |
| The Use of Eserine in the Treatment of Intestinal Paralysis | |
| | Dr. Kenneth E. Kellogg |
| Essay | |
| Stokes-Adams Disease, with Report of Three Cases | Dr. Walter R. Steiner |
| Essay | |
| Prognosis in Pulmonary Tuberculosis | Dr. Edward K. Root |
| Essay | |
| Surgical Treatment of Certain Lesions of the Upper Abdomen | |
| | Dr. John B. Boucher |

Essay

Acute Articular Rheumatism

Dr. Calvin Weidner

Report of Cases

Successful Resection of Gangrenous Intestine Following Strangulated Femoral Hernia

Dr. Chas. E. Taft

NEW HAVEN COUNTY.

October 19, 1905.

President's Address

Dr. Augustin A. Crane

Cerebro-Spinal Meningitis

I. History

Dr. H. Merriman Steele

II. Ætiology and Diagnosis

Dr. F. W. Wright

III. Pathology and Treatment

Dr. O. T. Osborne

Dissertations

Dr. E. D. Hall

Dr. H. E. Anderson

Dr. E. H. Arnold

Voluntary Papers

A New Form of Intestinal Obstruction

Dr. A. V. Moscheowitz of New York

April 19, 1906.

Urethritis Specific

I. Acute in Male, also Pathology

Dr. H. L. Welch

II. Chronic in Male

Dr. R. A. McDonnell

III. In Female

Dr. E. W. Goodenough

Dissertations

Dr. F. N. Sperry

Dr. L. M. Gompertz

Dr. Caroline North

NEW LONDON COUNTY.

October 5, 1905.

Dissertation

Diphtheria Antitoxin in Laryngeal Diphtheria

Dr. George N. Jennings

April 5, 1906.

Essay

The Non-Flesh Dietary in Health

Dr. N. P. Smith

FAIRFIELD COUNTY.

October 10, 1905.

Vice-President's Address

Progressive Medicine

Dr. William S. Randall

Reading of Papers

The Relation of Laceration of the Cervix to the Development
of Carcinoma

Dr. James N. West

Surgery of Gastric Cancer

Dr. Harris F. Brownlee

Tubercular Peritonitis

Dr. Albert J. Roberts

April 10, 1906.

President's Address

Preventive Medicine

Dr. William J. Tracey

Report of County Reporter

Dr. Donald R. McLean

Reading of Papers

Normal Involution of the Appendix

Dr. Robert T. Morris

The Relation Between Clinical and Laboratory Evidence

Dr. Dorland Smith

Paper—title not announced

Dr. F. M. Tiffany

WINDHAM COUNTY.

November 22, 1905.

Address by the President

Dr. Charles C. Gildersleeve

Address by President of State Med. Society

Dr. N. E. Wordin

Another Year's Experience in the Use of the X-Ray

Dr. J. B. Kent

Clinical Pathology in General Practice

Dr. J. H. Evans,

Pathologist to Backus Hospital, Norwich

LaGrippe—Its Diagnosis and Treatment

Dr. F. E. Guild

Surgical Paper

Interesting Cases

Dr. G. R. Harris,

Surgeon to Backus Hospital, Norwich

Special Paper

Mutual Medical and Surgical Responsibility

Dr. S. B. Overlock

April 26, 1906.

Essay

Functional Disease of the Liver

Dr. F. A. Morrell

Voluntary Paper

Craniotomy and Abortion

Dr. Patrick Cassidy

Paper

- Diseases of the Maxillary Sinus, with Anatomical Specimens
and Photographs of Cases Dr. M. H. Gill,
Oculist and Aurist St. Francis Hospital, Hartford

Address

- The Physician, the Health Laws, and the Health Officials
Geo. E. Hinman, Esq., Health Officer for Windham Co.

Paper

- The Pharmacopœia Dr. Geo. M. Burroughs

Paper

- The Surgical Treatment of Certain Lesions of the Upper Abdomen
Dr. J. B. Boucher, Surgeon at St. Francis Hospital, Hartford

Paper

- The Therapeutic Value of Ergot Dr. Oliver T. Osborne,
Professor of Materia Medica and Therapeutics,
Yale University, New Haven

- Mastoiditis and Sinus Phlebitis Dr. John E. Sheppard,
Aurist to L. I. Coll. Hospital, St. John's, etc., Brooklyn, N. Y.

LITCHFIELD COUNTY.

October 10, 1905.

- Some Uses of the High Frequency Current Dr. S. G. Howd
Movable Kidney Dr. George N. Bell
Differential Diagnosis of Inflammatory Conditions of the Eye
Dr. Ellwood Harlow

April 24, 1906.

- President's Address Dr. G. H. Knight
Neurasthenia, with Recovery Dr. E. R. Pike
Dry Hot Air in the Management of Some Common Pathological
Conditions Dr. C. E. Skinner
The Visual Tract Dr. A. N. Alling
The Value of Drugs in Therapeutics Dr. G. H. Wright
Topic for Discussion
Epilepsy: Report of a Case Dr. J. C. Kendall

MIDDLESEX COUNTY.

October 26, 1905.

Clinical Conference

| | |
|-----------------------------------------------------|----------------------|
| Cases of Goitre Treated by Thyroidectin | Dr. F. K. Hallock |
| A Typical Case of Typhoid after Seventy | Dr. J. T. Mitchell |
| A Case of Varicosis of Axilla and Thorax | Dr. J. H. Mountain |
| A Case of Volvulus of the Stomach | Dr. G. Streit |
| Two Unusual Cases of Paresis | Dr. A. R. Diefendorf |
| A Case of Haematothorax | Dr. A. B. Coleburn |
| A Case of Diabetes | Dr. C. A. Sears |
| Treatment of Cases by the Schatz Pessary | Dr. K. C. Mead |
| A Case of Epilepsy | Dr. C. V. Luther |
| 1. Reversed Peristalsis following Ectopic Gestation | |
| 2. Experience with Aspirin and Mesotan | Dr. F. S. Cowles |

April 26, 1906.

Paper

| | |
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| The Gall Bladder | Dr. T. P. Walsh |
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Clinical Reports

| | |
|----------------------------------------|-------------------|
| A Case of Disease of the Nasal Sinuses | Dr. E. G. Rowland |
| A Case of Lichen Planus | Dr. H. T. French |

President's Address

Dr. F. Sumner Smith

TOLLAND COUNTY.

October 17, 1905.

Business Meeting

No Papers

April 17, 1906.

Essay

Dr. W. L. Higgins

OBITUARIES.

Henry Putnam Stearns, M.D., Hartford.

GURDON W. RUSSELL, M.D., Hartford.

Dr. Henry P. Stearns came from an old colonial family in Massachusetts, which had, in its subsequent generations, a strain of the Israel Putnam blood. Our friend, with pardonable satisfaction, occasionally made reference to this, in a laughing way, as perhaps responsible for some of his opinions and actions in his professional life. It doubtless did give him a quickness of perception and an energy in action which made him ready at all times and on all occasions.

For most of the mere statistical matter which follows, I am indebted to articles which appeared in several of the daily papers of the city. Dr. Stearns was born at Sutton, Mass., April 18, 1828, and was the son of Asa and Polly (Putnam) Stearns. His early education was at the ordinary country schools of his native town, and at the Academy at Munson. He entered Yale College and was graduated Bachelor of Arts in 1853. Having decided upon his future work in life, he attended lectures in the medical department of the Harvard University, and in the medical department of Yale College, from which latter institution he was graduated in 1855.

He passed a part of the next two years in Scotland and in Paris attending the lectures of some of its best teachers, and was house surgeon of the Royal Infirmary, Edinburgh. He married Miss Annie Elizabeth Storrier of Dumfries, Scotland, in 1857, and returned to his home with a charming and sympathetic wife, and an improved education. He commenced his practice in the small town of Marlborough, Middlesex County, where he remained about two years. He doubtless learned something in that budding and enthusiastic time of life, for most young men do, who are planning and striving to make a place for themselves. In bringing him in direct contact with his patients in their homes, he learned something

about the necessary behavior in private practice, that sweetness of temper, sympathy, and desire to please, which is not always found in a public institution. It is a field which must be found and understood, and is a material help to the success of anyone.

But it was too narrow for a man of his ambition, and so he came to Hartford in 1859 and offered his services to the public. The early years of a young physician are hard enough in any case, and he who expects to be successful in any business will find that much depends upon his own exertions. While Dr. Stearns' acquaintance with people in Hartford was not very extensive, he had a few who had known him in previous years, and were well disposed to help him. With industry and confidence in himself he was gaining a fair standing in the city, and especially with his professional brethren.

There was a wider opportunity opening, which he quickly embraced at the beginning of the Civil War, and when the call was made for troops he offered his services to Governor Buckingham, and was appointed surgeon to the 1st Regiment Connecticut Volunteers. He first saw actual service at Bull Run, that discouraging location to half-hearted sympathizers, but not to men who had counted the cost.

When the term of enlistment had expired and the regiment returned, and other forces were being called for, Dr. Stearns again volunteered, remaining in the city, hoping for appointment. There were hindrances and delays somewhere, which prevented the quick execution of business. The art of fighting is born in our human nature and is easily learned, but the art of war comes from experience, and is bought at a terrible cost. He was anxious and impatient at the delay, and going to Washington, passed the examination board with credit, and turned his face to the West, being appointed Brigade Surgeon of Volunteers, under General Fremont. It was in that region of country that he was actively engaged for the succeeding four years.

I copy from a published record: "He was brigade surgeon under General Fremont. He was later ordered to report to General Grant, after the latter's first battle at Belmont, and was a member of his staff during the winter of 1861-2, and until the army was reorganized for the campaign up the Tennessee River.

He was with Grant at the battles at Fort Henry and Fort Donelson, and was on the staff of General McClellan at the battle of Shiloh. Afterwards he was on duty in the office of Col. R. C. Woods, Assistant Surgeon-General, U. S. A., at St. Louis. After serving with Colonel Woods, Dr. Stearns was promoted to be medical director at Paducah, Ky., and was there when Forrest made his celebrated raid into Kentucky. He was then sent to Jeffersonville, Indiana, where he built and equipped the Joe Holt Hospital. Afterwards he went to Nashville, Tennessee, where he was made medical director of the northern wing of the army of Tennessee. In that city he converted the public buildings into hospitals, and equipped them until he had 11,000 hospital beds and an average of 10,000 patients under his charge, with a force of one hundred surgeons and twenty clerks. He was mustered out from the United States service August 25, 1865, the war being over, with the brevet rank of lieutenant-colonel, and was offered a position in the medical department of the United States Army, but finding that there was not work to do, he gave up the idea of army life and returned to Hartford. He had served his country with rare faithfulness and good judgment."

He entered upon general practice again with most encouraging prospects. He was in good health, was strong and vigorous, his natural energy and confidence in himself seemed to have been increased by his service in the army; he had gained not only in strictly professional knowledge, but had learned the ways of men, and how to adapt himself to them. He was naturally courageous but not domineering; he was cheerful, honest, and just; he knew how to differ without being offensive, and was ready to please without being sycophantic. The service of four years had developed and rounded out his natural characteristics and made him a man to be reckoned with in the struggles of life.

The Civil War, which had required the service of many surgeons, had left them unemployed. They were justly ambitious and desirous of employment; to say that they expected all others should give way to them would be unjust, but they doubtless felt as victors and as persons deserving more than usual commendation. They certainly were correct, and it is an honor to the profession generally, that they were most cordially received and

assisted in their endeavors to establish themselves in general practice again. The honor and consideration which came to them from the general public was in no wise minimized by the support which they received from their professional brethren. The result which had been accomplished was for the benefit of all.

I saw considerable of Dr. Stearns during this period of his life. While he was very active in his daily business, he was not negligent of his studies. He was fond of books and accumulated a library of considerable extent, larger probably than many, larger than most of those of his brethren. He did better still, he found time to read them. His was a nature calculated for the quiet enjoyment of the duties and obligations of life, the comforts and conveniences which attend them, together with a lively sense of all his responsibilities to his neighbor and his God. It was at this time that he began to pay some attention to the subject of mental disease. Why he did this I never knew, perhaps it was from his intimate association with Dr. Hunt, Dr. Butler, and some others who were connected with the Retreat for the Insane, Perhaps it was from his own conviction of the value of what he had learned in the service, in the establishment and management of hospitals. Doubtless he had a consciousness that, with a more thorough and intimate acquaintance with the cause and pathology of mental disturbance, he might qualify himself for other positions which might give him full pleasure and satisfaction. Whether this be true or not, it could not be counted as discreditable. While he did not hide his talent in a napkin, he did not think it necessary to flout it in the face of every one.

Dr. John S. Butler, who for many years had been the superintendent of the Retreat for the Insane, resigned that position in 1874. and Dr. Denny, first assistant physician, was appointed to succeed him. But there had long been considerable friction in administering the affairs of the institution, and Dr. Denny was not willing to take the position offered him without changes in the by-laws, and more definite statement as to the duties of each official. From the very beginning the superintendent had desired more liberty in conducting the affairs of the Retreat and of deciding what was desirable for the care and comfort of the patients; it was inconsistent that a non-professional person should

overrule the desires or authority of a superintendent. Dr. Butler, by passively yielding to measures which he could not control, passed through his twenty-five years of service, with great credit to himself and benefit to the institution. The Retreat prospered under his care.

But Dr. Denny was a very different man, who had ideas of his own and insisted upon them. Hence there was no possibility of agreement, and he refused to accept the appointment but continued in his duties, until a successor was chosen.

There was a breeze of excitement about this time among the officials, and it was recognized that a superintendent should be a superintendent in fact as well as in name. When men come to an agreement upon matters in which they have greatly differed, it is not worth while to discuss too much of the past. So when Dr. Hunt brought forward the name of Dr. Stearns it was very favorably received, and he was chosen unanimously as superintendent of the Retreat for the Insane, January, 1874.

Dr. Stearns was rapidly acquiring a good reputation and an extensive practice; probably he would have received more money if he had remained as a general practitioner, but the position was a good one, and it was seconded by his late studies in mental disease. He accepted the position, requesting an absence for three months. His election was extending the custom of choosing for superintendent a man who had seen something of his profession outside of an institution as well as in it. His views are thereby broadened and made to fit into things as they occur in the world. Dr. Page was made first assistant, and Dr. Hunt and myself agreed to spend a portion of each day in bridging over the time until Dr. Stearns should return.

He immediately went abroad, spending his time mostly in Scotland and in England. He visited the most notable institutions provided for the insane, and became familiar with their management. His general professional knowledge and his extensive hospital work were easy introductions to his future success. He became acquainted with some of the most distinguished men in the specialty, and returned in May, strong in health and purpose, ready to take up the work of his future life.

It may not be necessary to specify in detail his labors for the next thirty-one years. He succeeded a superintendent whose work for twenty-five years had been arduous and satisfactory. The buildings had been extended and rearranged under his service; the patients of the State had been removed to Middletown, and the Retreat was left to its own resources. Dr. Butler worked wisely and well. His enthusiasm led to various improvements, but few were as significant as placing in the halls and rooms beautiful pictures and engravings. The astonishment of a few was excited at the practical working of so dangerous an experiment. Subsequent history has shown that little damage ever followed, and that it was about as safe as it would have been in an ordinary well-filled dwelling.

The necessity for mechanical restraint for the insane had long been established; not for all, however, but certainly for those who were very excitable. If Dr. Stearns had done nothing more than to disprove this he would still be entitled to distinction. The popular belief was in favor of restraint, and the professional belief was not far behind it. It was beginning to be doubted however, and he proceeded so quietly and judiciously in his experiment that very soon he was able to say, that mechanical restraint was rarely practiced in the Hartford Retreat. I have been acquainted with this institution ever since I was a medical student, and know something of its internal management under Dr. Fuller and subsequently under Dr. Brigham, my preceptor, and still more under that of Dr. Butler. Like many other great discoveries, it came not as a single thought, but by leaps and bounds, the development of many minds, the full product by Dr. Stearns.

He saw also how the usefulness of the Retreat might be increased by erecting upon its grounds a number of cottages for the use of some of the insane. The first was erected by Mr. Spencer for his daughter, and was afterwards presented to the Retreat. A number of others followed in due time and have become exceedingly useful. The grounds have also been considerably increased, and improvements made under his supervision.

As a man Dr. Stearns was upright, standing square as a soldier upon his feet. He was vigorous, robust; he was healthy,

physically and mentally; he was courageous and decisive; he knew when to advance and when to stop. He was ready and easy as a speaker, grasped the subject well in hand, and developed it as if it was an easy problem. It seems to me that he possessed in an eminent degree that virtue of common sense which makes a man useful and delightful. His mental poise was notable; he would praise rather than blame, but had that exact sense of justice which endeavors to do things which are right and honorable. He had such a sound religious sense that it governed all his actions, controlled his thoughts, and made him the useful man that he was. He was a deacon in the Center Church for many years.

He loved company; he was happy in his home, happy in his companionship with his fellows. He liked a joke, a laugh, a repartee; he could unbosom himself in quiet confidence with a friend, he could rejoice with a multitude without becoming vulgar.

His literary activities were great; he read and retained in memory exceedingly well, quoting not infrequently many passages. He wrote with ease, filling his annual reports with distinct accounts of what he had done, and what he proposed to do. He had such a sense of profound responsibility in his work, that he was ever ready and anxious to push it still further. He wrote many papers pertaining to his specialty, and made many addresses in the numerous societies with which he was connected; he was so linked with the medical profession in the State, that he was made President of the Connecticut Medical Society. He was often called upon to give his testimony in the courts, and so reconciled to his duty that he never could be made a partisan. He testified in the famous case of Guiteau, and published some account of it afterwards. He gave a series of lectures to the students in the Medical Department of Yale College on Insanity, which were continued for eighteen years, and were afterwards published, valuable both to the general practitioner and to the alienist. He was a member of many medical societies and took pleasure in attending their meetings; was medical examiner in the Travelers Life Insurance Company and also a director; he was so much of a business man that he was welcomed in other corporations. He enjoyed greatly his annual vacations, which were spent mostly in

Maine or Canada, and came back refreshed and ready for work. He spent a short time again in Europe among his professional friends.

It had been the desire of Dr. Stearns to terminate his connection with the Retreat after thirty years of service. Before that time had arrived it began to appear there might be some doubt of this. He had become weaker, more easily fatigued, was growing thinner, and referred often to his former wish. He enjoyed exceedingly a fishing excursion to his old locality, and seemed for a while to be benefited, but the progress was slow. He was anxious for the prosperity of the institution in whose service he had been so long engaged. His supreme wish was gratified; he held the office of superintendent for thirty-one years.

Finally he was confined to his bed, able to take and retain little nourishment; the disturbance in the digestive organs had become serious, the mental activities were lessened, it seemed at times as if our brother was in a maze; he spoke so feebly that he could hardly be heard. Soon he spoke no more.

Quite a number of his medical friends saw him during his illness of two years. They cheered him greatly, aided him with words of friendship and comfort, but could not relieve that degeneration of the blood-vessels in the brain which overcame him at the last.

Henry P. Stearns, b. 18th April, 1828; m. Annie E. Storrier, Dumfries, Scotland, 1857; she d. 19th April, 1903; he d. 27th May, 1905; had children, Henry Stuart, Charles Storrier, Ellen Brodie, d. young.

I may properly add a few words to this sketch. The death of Dr. Stearns removes the last of the younger physicians who came here before the Civil War. There is now no one remaining but myself. Looking back over that long course of years I realize how much the profession has gained in numbers and in strength. When I entered the profession in 1837, there were physicians here who had been in practice in the eighteenth century. Among them was Dr. Lemuel Bacon, the grandsire of that gentle and generous man whose mortal remains we laid away but a few days since. Let us cherish his memory and that of all our associates who preceded him.

William Turner Bacon, M.D., Hartford.

HARMON G. HOWE, M.D., Hartford.

William Turner Bacon, M.D., was born in Hartford, Conn., August 27, 1846, being the son of Leonard Holmes Bacon and Elizabeth Chester Turner. Both parents were from old New England Puritan stock, the father being a direct descendant from Michael Bacon, one of the founders of Dedham, Mass., settling there from England in 1640, the mother descending from Nathaniel Turner, one of the founders of New Haven Colony in 1650, coming from England with Governor Winthrop. Thus both lines of ancestors were represented by a member arriving in this country within ten years of each other.

Dr. Bacon was married to Miss Mary E. Coit, a daughter of the late Samuel Coit of Hartford, June 10, 1875. Their married life was without issue. Dr. Bacon was a very devoted husband, the long illness of his wife necessitating constant care and attention, which he gave unstintedly. The doctor and his wife traveled very extensively in the latter years of his life.

Dr. Bacon graduated from the Hartford High School in 1863, entering Yale College in 1864, and graduating in 1868 in a class consisting of many celebrated men. Then he began the study of medicine in the medical department of the University of New York, having as preceptor Dr. M. Storrs of Hartford, as at that time every student was obliged to enter his name under a graduate physician. He graduated from that institution in 1871, and then entered Charity Hospital, New York, where he served as interne for one year. Then he entered Roosevelt Hospital, New York, where he served as interne for about one year. He then received the appointment of tutor and assistant to the Professor of Physiology in the medical department of the University of New York, serving at the same time as curator of Charity Hospital and as student in the New York Eye and Ear Infirmary

and as assistant surgeon in this institution; also as attendant physician to the outdoor poor from 1872 to 1876.

Dr. Bacon then came to Hartford and became a member of the Hartford Medical Society on October 2, 1876, joining the Hartford County Society in the following spring. With his fine fitting in the specialty which he had chosen he was taken on the staff of the Hartford Hospital in 1878, where he served faithfully until January of this year, 1906. He being cognizant of his physical condition, asked to be put on the consulting board at the annual meeting of the staff in December last. He also served on the board of St. Francis Hospital from the day of its opening until his death.

Soon after coming to Hartford Dr. Bacon became instructor in a Pathological Society founded by Dr. Chamberlain and others, and for two years served the society very efficiently as instructor in the use of the microscope, mounting of material, and in all the technique of the pathological laboratory as practiced at that date.

Dr. Bacon was a very active member of the Hartford Medical Society; indeed when in town he was always in his seat at the regular meetings of the society, the members recognizing his right by possession of a certain seat which he occupied. He was interested and active in forwarding the erection and furnishing of the Hunt Memorial. He became President of the Hartford Medical Society in 1902, serving one year as is the custom. The Hartford Medical Society cherish the memory of Dr. Bacon quite as much for his personality, which will live in the minds of us all, as for his great liberality in willing the society the magnificent sum of \$100,000.

Dr. Bacon was elected as president of this society on April 18, 1900, serving one year in the chair. He has often filled the position of Fellow from this county, and has served on the Anniversary Committee of the State several times. Dr. Bacon was well known throughout the State as one of the leading specialists in his line. His grandfather, Dr. Leonard Bacon, was a well-known practitioner in Hartford. On the maternal side there was a Dr. Turner, of Philadelphia, an uncle of Dr. Bacon, who was prominent in the profession of that city. Mrs. Conyng-

ham of Wilkes Barre, Pa., an aunt on the maternal side, is still living. Dr. Francis Bacon, of New Haven, and Dr. Leonard Bacon, also of that city, were of the same branch of the family.

Among the societies to which Dr. Bacon belonged are the following: Sons of the American Revolution, member of the Society of Cincinnati, Yale Alumni, Roosevelt Hospital Alumni, Congregational Club of Hartford, D. K. E. of Yale, Hartford Club, The State Medical Society, Hartford County Medical Society, Hartford City Medical Society, American Medical Association, American Ophthalmological Society. He was also a Mason of the third degree.

Dr. Bacon joined the Asylum Hill Congregational Church in 1877, and allowed nothing to interfere with his constant attendance at the public services on the Sabbath, up to the time of his death.

Although he was interested in so many societies, his church and the local medical societies were the only ones which interfered with his home life. His evenings and spare time were generally spent at his home, which he cherished dearly. He had little taste for society, the functions which secured his presence being fortunate and few.

Dr. Bacon was a ready writer and on many occasions we have heard him in this society as principal essayist or in discussion. He was explicit in his statements and forcible in discussion, yielding a point only when thoroughly convinced of error. He was well versed in parliamentary usage, and made an excellent presiding officer. Under a sometimes austere exterior he possessed an extremely kindly and charitable disposition. In his decease this society suffers in the loss of one of its most prominent members.

[Jarvis King Mason, M.D., Suffield.

EDWARD F. PARSONS, M.D., Thompsonville.

Jarvis King Mason, M.D., Harvard '61, Yale, A.B., '55, M.A., '59, died April 8, 1905, in Suffield, having been engaged in the practice of medicine and surgery for forty-three years.

He was the son of John Mason and Achsah Terry Mason, and was born November 8, 1831, in Enfield. Through his father he was in the line of Capt. John Mason, of Pequot fame, and through his mother in the line of Deacon Benjamin Parsons, one of the founders of Springfield, Mass., and prominent in the settlement of Enfield. From both these sources he inherited directly stalwart New England characteristics. Many individuals from families composing both these ancestral lines gained prominence in and out of the professions, and attained special usefulness in church and state.

His father, mother, and the other members of the family were noted in their community for their reading and scholarship. His father was called a walking encyclopedia, and his mother was the nucleus of the gatherings for the literary students of the neighborhood.

Loaded at birth with such hereditary predispositions, it is no wonder that Dr. Mason should early in life manifest a keen sense of the seriousness of living and an appreciation of the duty of making the most of his intellectual ability by multiplying opportunities as so many in our noble profession have done before and since for gaining thorough equipment for usefulness in life. The district school did not satisfy his craving for knowledge, and he early sought the advantages offered at the academies located at Monson, Wilbraham, and East Hampton (where he was finally fitted for college). He entered Yale at the age of twenty-one, and graduated Bachelor of Arts in the year 1855. After leaving college he taught in various schools for a few years, and traveled

quite extensively over the west and southwest, settling to the study of medicine in Harvard Medical School, where he graduated in medicine and surgery in 1861. Dr. Mason was exceedingly proud of his academical and professional studies, appreciating emphatically the opportunities which he had enjoyed for obtaining a liberal and professional education. He, more than is usual, showed his high appreciation of the same by making good use of his accomplishments in benefiting others.

The same personal self-respect and dignity, which his scholarship had fortified him with, gave him courage to make a settlement for his life work in so noted a town as Suffield, where he would have for competitors such well-known practitioners as Rising, Newton, and Kellogg. He was proud of his education, not vain of personal accomplishments. He respected his intellectual ability and was not conceited because of his diplomas. In a few years he manifested his fitness for the place by obtaining not only a choice practice, but positions in town of influence, because of his character, intelligence, and sound judgment.

He was tenacious of his rights and prerogatives, and, though from his persistence in maintaining his position in controversy, he may have acquired the reputation of being an irascible antagonist, he was honorable in his contests and anxious for a square deal, relying upon facts and logic, rather than dishonorable tactics, for his successes.

While he engaged as a general practitioner and did not claim to be a specialist, his ambition was to practice surgery, and in his earlier days he did, for a country doctor, some very creditable work in this line.

He treated four cases of fractured patella successfully without wiring, and two cases of traumatic tetanus without antitoxin.

He gained a reputation for being especially expert in the treatment of pneumonia and typhoid fever.

His daring in surgery was backed up by his knowledge, and his courage by his familiarity with anatomy. His desire to use the scalpel did not diminish his respect for other means for removing disease. In other words, his ambition to be a surgeon did not blind his therapeutics.

Dr. Mason was faithful, studious, no shirk, loyal to his profession, and emphatically to his own school of practice, always in his discussions giving the impression that those who adopted any other system of practice were of inferior capacity, and not worthy to be treated as professionally equals. He was self-confident, but not conceited, a humble, loyal disciple of scientific medicine.

His devotion to his family was phenomenal, and the same ambition which pervaded his father's family to covet scholarship in his day prevailed now with the son, and hence his children were favored with collegiate training at Wellesley, Holyoke, or Trinity.

But the felicity of the doctor's family life was sadly and repeatedly interrupted by death. His first wife, Mrs. Mary R. (Homer) Reynolds of Monson, died April 13, 1864, within a year after their marriage. Miss Clara K. Halliday of Suffield, his second wife, died February 2, 1876, leaving two daughters, one of whom died October 26, 1882. His third wife, Miss Mary Louise Eastman of Amherst, with two daughters and a son, together with the daughter by the first wife, survived him.

Dr. Mason was a loyal and intelligent citizen. He voted with the Republicans. He was not a politician, his time being devoted mostly to his family and his profession. He was a man of much reading, but considered time spent in novel reading well nigh, if not quite, wasted. He wrote on medical subjects, and his articles found their way into medical periodicals, — one paper of special note on Nervous Diseases in Women of America, delivered when president of Hartford County Medical Society, was published in the State Society proceedings. His intelligence and executive ability secured for him many positions of trust. He was for over twenty years medical examiner for the town of Suffield. For many years he was health officer of the town. He was also a member of American Medical Association, president of Hartford County Health Office Association, medical examiner for a number of leading life insurance companies, a director of the Kent Memorial Library. He was a member of the Congregational Church, and interested in all public improvements.

Stephen Grosvenor Hubbard, M.D., New Haven.

JOHN NICOLL, M.D., New Haven.

Stephen Grosvenor Hubbard, M.D., was born in Rome, N. Y., October 16, 1816, and died in New Haven, Conn., June 30, 1905, in the eighty-ninth year of his age.

Worn and weary with the infirmities due to his years; soothed and sustained by an unfaltering trust in a blessed immortality in that "unknown country" beyond, he "approached the grave like one who wraps the drapery of his couch about him and lies down to pleasant dreams."

Doctor Hubbard's ancestors lived in Connecticut; Benjamin Hubbard, his grandfather, was a commissary in the war of the Revolution; an uncle, Thomas Hubbard, M.D., was professor of the principles and practice of surgery in the medical department of Yale College from 1829 to 1838.

His parents, Stephen Hubbard and Zeruiah Grosvenor, daughter of Oliver Grosvenor of Pomfret, Conn., moved with their family from Connecticut to Rome, N. Y.

When quite a young lad, Dr. Hubbard had a severe attack of fever, and later in life often spoke of the wonderful nursing of his mother at that time, which saved his life. His health for some time after was very frail, and he was supposed to have tuberculosis; the physician who attended him decided that a life in the open air was the only thing that could restore him to health; therefore taking his dog and gun, he went out to a lumber camp, where he lived for many months; he soon gained rapidly in flesh and strength, and returning to his home, had no return of the tubercular indications.

In May, 1835, when about nineteen years old, he, with two older brothers, became imbued with the idea that the proper thing for men seeking fame and fortune, was to go West. Leaving Rome they made a short stay in Chicago, then went to a growing town

called Joliet, where they opened a country store; after two years they decided to sell out the store and take up a section of land in Livingston County, Illinois, to try farming. In 1837, a time of great financial depression throughout the country, they became discouraged with the outlook for the future, gave up the farm and returned to Rome.

Stephen, who always had a strong desire for books and study, determined to enter the medical profession; his opportunities for education had thus far been limited to the advantages offered by the common schools. His older brother Oliver was at this time professor of chemistry at Dartmouth, and kindly invited him to reside in his family while pursuing his medical studies, which invitation he gladly accepted, and there he had the opportunity for mental improvement that he had long desired.

He was graduated from the medical department of Dartmouth in 1843, and soon after formed a partnership with Doctor Hard of Aurora, Ill., but the great exposure attendant upon driving over the prairies, led him to abandon that location, and returning to the East, he located at Hadley, Mass., where he had a very successful practice for more than two years. The older inhabitants of Hadley remember with gratitude his devoted attention while he resided with them.

Here again, the exposure of country practice and the limited advantages for advancement in his profession, induced him to seek a more promising location, and he went to Brooklyn, but did not remain long, being urged by friends to make New Haven his home. He opened an office here in 1848, at the time when Jonathan Knight, Eli Ives, Charles Hooker, and Henry Bronson were brilliant lights in the medical profession. Contemporaneous with, and following them, he ever maintained the honor and dignity which characterized those noted men.

He joined the New Haven Medical Association in 1848, and the same year became a member of the Connecticut Medical Society.

In 1861 he married the widow of Henry E. Robinson of Durham, Conn. She was the daughter of William Plumb, a prominent citizen of Middletown, Conn., who frequently represented his town in the State Legislature, both as senator and

representative. Mrs. Hubbard died in 1891; there were no children by this marriage.

Dr. Hubbard was a prominent member of the State Medical Society; a member and at one time secretary of the American Medical Association; also a member of the Gynaecological Society of Boston; and of the British Medical Association.

During the Civil War, he was one of the attending physicians at the Knight Hospital, and post surgeon at the camp at City Point, where he examined most of the volunteers who "went to the front" from that post. For many years he was attending physician at General Russell's celebrated military school.

He was instrumental in obtaining the necessary legislation to secure a proper registration of vital statistics throughout the State, and was the first regularly elected registrar in New Haven.

In 1860 he received from Yale the honorary degree of M. A., and four years later was appointed professor of obstetrics and diseases of women and children in the medical department of Yale, which chair he occupied until 1880; after sixteen years of service, at his own request, his resignation was accepted.

Always faithful in the discharge of duties which official position imposed upon him.

In 1866 he went abroad and spent several months as the pupil of Sir James Simpson; he studied also in London and Paris, striving to perfect himself in his chosen specialty of gynecology; again in 1874 and in 1878 he made visits to Europe for the purpose of medical study.

In the summer of 1895 he was called to Norfolk, Conn., to visit his brother who was ill at the hotel in that place; soon after his arrival he fell through an unguarded chute to the floor below; several ribs were fractured and he was completely unconscious for forty-eight hours; the shock was such that little hope was entertained for his recovery; though in a critical condition for several weeks, he slowly improved sufficiently to be brought to his home, but never regained his usual health, and was obliged to retire from his professional occupation.

In 1898 he had an attack of diabetes with all the pathognomic symptoms of that disease, the result, he thought, of the severe shock to his nervous system from the accident above mentioned.

After several months the diabetic symptoms entirely disappeared and there was no return of the trouble. The doctor made a study of the disease, and in a paper to the State Society, gave the result of his investigations as to the nature and cause of diabetes.

During his long membership in the Connecticut Medical Society he contributed many instructive papers, and presented many interesting cases to the New Haven Medical Association. He was also a frequent contributor to several medical journals. By request of the New Haven Historical Society, in 1894 he prepared and read to that society a paper commemorative of the professional and personal character of Henry Bronson, M.D., in which he brought to light the wonderful attainments of a man whose native modesty had prevented a due appreciation of his great wisdom and many virtues.

Dr. Hubbard was eminent as a practitioner of medicine, fond of study and of books, never satisfied with a superficial knowledge of any topic that he considered worthy of notice, but by careful study and philosophical reasoning, he formed opinions and arrived at conclusions not to be shaken without convincing argument. He was usually correct in diagnosis and sagacious in his choice of remedies; no temporizer, and unwilling to yield his decided opinions to the whims of patients. He was much respected in the profession, and beloved by patients who could adapt themselves to his peculiar temperament. He did not neglect patients in indigent circumstances who desired his services, but gave them faithful attendance, and often pecuniary aid.

Eminent as were his talents as a physician, he was no less gifted as a citizen of prominence. Being a constant reader and diligent student of matters pertaining to public affairs, he kept himself in touch with current events transpiring throughout the world, and having an unusually retentive memory he stored in his brain the knowledge he acquired, ready to use as occasion demanded. He was a caustic critic, a sarcastic writer, and a fluent speaker. Having a thorough command of the English language, he was enabled to give expression to his thoughts and views, either in conversation or as a writer for the press, in words timely and impressive. Often wounding the feelings of friend and foe by his brusque speech, yet never approaching with a smiling

face and unctuous tongue, having a concealed dagger ready for a thrust in the back.

He had his peculiarities and faults, but I would throw the mantle of charity over such, remembering that we all have failings. In a friendship of over fifty years, I had learned to admire the good that was in him, and to respect the remarkable attainments of this self-reliant man.

Charles A. Lindsley, M.D., New Haven.

WILLIAM H. CARMALT, M.D., New Haven.

It is not often that our profession finds in its ranks one who, working along in plain everyday routine, unites in himself so many lines of professional usefulness as the subject of this sketch. Dr. Charles Augustus Lindsley, born in Orange, New Jersey, on the 19th of August, 1826, died in New Haven, Conn., on March 9, 1906, where he had lived an honored life for over fifty-five years. He received his collegiate degree of B.A. from Trinity College, Hartford, in 1849, and his M.A. in 1852, the same year that he was graduated M.D. from the medical department in Yale College. He began his medical studies immediately after his graduation from Trinity College, under the preceptorship of the late Dr. A. J. Driggs of Cheshire, Conn., at the same time teaching in what was then the Episcopal Academy of Connecticut, better known as the Cheshire Academy. He afterwards entered the College of Physicians and Surgeons of New York, but completed the studies for his medical degree, as stated, in the Yale Medical School in 1852.

He was married in the same year to Lydia L. Harrison of Orange, N. J., a playmate of his boyhood, the daughter of Aaron Burr and Caroline Harrison, who survives him, and although their married life of fifty-four years was much more than is often given, their love may justly be said to have been of their whole lives. They had five children born to them, of whom but two, Mrs. C. S. McChesney, of Troy, N. Y., and Dr. C. Purdy Lindsley, of New Haven, are still living.

He immediately settled to practice his profession in New Haven, forming a partnership with the late Dr. David Tyler. This connection lasted but a few months, when he established himself at the corner of Grand Avenue and Franklin Street, and began that faithful and conscientious career which was so char-

acteristic of his life. Entering upon practice before specialists and specialism became rampant, he was emphatically the family doctor, the beloved physician. For fifty-four years he cared for the sick in all seasons and at all times, no matter how poor his patient or how inconvenient the hour; the demand for help found him ever ready and cheerful to obey, delighting in the opportunity his profession afforded to relieve human suffering. But a few weeks before his own death he attended (though himself ill) in their last sickness two old patients whom he had cared for for forty years.

In 1860 he was called by the Medical School from which he was graduated eight years before, to the chair of *Materia Medica* and *Therapeutics*. He taught these subjects until 1883, when, at the request of his colleagues, he took the professorship of the *Theory and Practice of Medicine*, which he held until 1897, when he resigned, being immediately appointed *emeritus*, but in 1899 resumed work again as lecturer on *Sanitary Science*, which he continued until his death; literally "dying in harness." Besides his service as teacher, he was as dean from 1863 to 1885, the administrative officer of the school. In all these capacities he served faithfully and well. As a teacher he was thorough and clear in his exposition of the subject under consideration; as an administrator he was painstaking and accurate. In the thirty-seven years of association with his fellows in the medical faculty, he endeared himself to them by his courtesy and good nature, and high standards of educational work. A minute of appreciation and affection is entered in the records of the school.

He was active in the work of the State Medical Society. In the alphabetical index of the Centennial volume, this interest is shown in the large number of entries opposite his name. There are but three other names in the whole list more frequently referred to, and the appreciation with which his ability and dignity was held is shown in that he was elected to be its President in its Centennial year.

He was greatly interested in the General Hospital Society of Connecticut, being appointed attending physician to the New Haven Hospital in 1860, continuing in its service during the Civil War when the hospital was leased to the United States

government under the name of the Knight Hospital. He subsequently served as "contract surgeon" in the Lincoln Hospital in Washington, D. C. After the war he resumed his place on the hospital staff until 1871, when he resigned and was transferred to the consulting staff, which position he held at his death. He was elected a director to the hospital in 1864, and was secretary to the board from 1865 to 1879. He served on the direction until he died, taking an active interest in all its affairs.

His desire to aid in charitable medical work was further shown in his connection with the New Haven Dispensary from the time of its foundation in 1872. He was its vice-president from 1872 to 1884, when he was made president, holding that office at his death.

The subject which he chose *con amore* for his address as president of the Connecticut Medical Society at its Centennial Anniversary in 1892, after he had been forty years in practice shows in what direction his desire for the amelioration of human suffering had led him during the riper years of his professional life, viz: "The Beginning and Growth of Sanitary Legislation in Connecticut." While, as has been shown, he never permitted his sympathy for his individual patient to flag, he grew to take the broader view of the responsibility of his calling in that the prevention of disease, whether in the individual or the community, was of far greater importance, of wider scope and bearing, and more far-reaching in its influence for the general good; consequently sanitary science, the public health, preventive medicine, the registration of vital statistics, and allied topics were matters to which he devoted his time and thought during all the later years of his life.

It was mainly through his efforts that the Board of Health of the city of New Haven was reorganized in 1872; and from 1873 to 1888 he was its health officer. He was earnest and very influential also in organizing the Connecticut State Board of Health in 1874, and was until his death its secretary and executive officer. He was an enthusiast in tracing the sources of epidemic and contagious diseases, and much has been added to our knowledge of these subjects by his indefatigable industry and thoroughness. It would take altogether too much space to

enumerate his writings or give anything like a history of his work in this State alone; the Archives of our society contain much, although but a small part, of his investigations and comments on these subjects. In his capacity as secretary of the State Board of Health he became an authority on sanitary matters, not only in his city and state, but in the nation and beyond its borders. He has been president of both the American Public Health Association and of the International Conference of State and Provincial Boards of Health, the latter including Canada, Cuba, and Porto Rico in its membership; in the latter capacity acting in unison with the U. S. Marine Hospital service in preventing the spread of yellow fever. He was faithful in attendance in meetings of this character, traveling long distances and spending much time in these duties, and his voice was always raised in advocacy of measures to extend the knowledge of matters pertaining to public health.

He was selected to deliver the oration on State Medicine in 1892 before the American Medical Association of which he had been vice-president two years before. He taught with vigor the moral, physical, and commercial advantages of sanitation, — showed that the ounce of prevention was worth many times the proverbial pound of cure. In the last State Legislature he used every argument in reason to combat the worse than ignorant vaporings of those deluded beings who try to do away with our vaccination laws.

As registrar of births, marriages, and deaths for the city of New Haven, to which he was appointed in 1859, he learned the importance and difficulties of keeping accurate records in vital statistics, and afterwards while secretary of the State Board of Health, which office included that of superintendent of Vital Statistics for the State, he had occasion to review and revise the reports of the registrars throughout the state. His published comments and reviews of these and other matters on sanitary science which appeared in his monthly reports contain a wealth of information and hints and detailed instructions as to how such matters should be treated and regarded. It is possible that his comments on slovenly or otherwise faulty reports by those who gave impossible or insufficient or ridiculous "causes of death" may not have been

relished by the unwary reporter, but they served their purpose in a campaign of education, so that of late years these records have been accepted as models for other states throughout the country. In the words of his longest associate in this most beneficent public service, Professor Wm. H. Brewer, "His service to the public in matters of public health and hygiene cannot be overestimated."

Studying in Trinity College and teaching in the Episcopal Academy at Cheshire indicate the bent of his religious belief. He was an earnest and consistent churchman all his life. On coming to New Haven he joined St. Paul's Protestant Episcopal Church, but when St. John's Mission Church was established by St. Paul's, he transferred his attendance to the younger parish to help build it up, serving as vestryman and senior warden until 1878, when he joined St. Thomas', where he became vestryman until his death. His funeral was held in this church with the solemnly beautiful rites he so loved. The church was filled with mourning friends, — the large number of members of the New Haven City Medical Association, of which he was an honorary member, being especially the subject of remark, as indicating the affection and esteem in which he was held by his professional associates.

But few of his profession not members of one of the public services, have given so much of their time and energies to the public welfare. The last years of his life may be said to have been given entirely to this. His report as secretary of the State Board of Health was going through the press when his last illness came to find it still uncompleted. He dictated much of it from his dying bed; as the "Vital Statistics" were read to him he would assign each to its proper place, but as his failing strength brought this effort to a close, his mind still clung to his life's work, and the last articulate word that in his delirium fell from his dying lips was "unclassified." Not so, good and faithful servant! At the call of the last roll thy name will not be entered in the great unclassified list of those whose talent was hidden in a napkin, but rather as one who "shall have authority over ten cities."

The writer of this all inadequate sketch cannot forbear his personal tribute to a friendship and community of thoughts of

thirty years. When he came to New Haven in 1876, Dr. Lindsley was dean of the Medical School to which the writer soon after became attached in a subordinate capacity. For the first few years he had no occasion to learn how much interest Dr. Lindsley took in educational matters; the school was going on in the routine way of lectures fired off at the students on the benches as in other schools throughout the country. Later, however, becoming more closely interested in and responsible for the instruction, he learned how thoroughly and uniformly Dr. Lindsley was in sympathy with every effort for the advancement of medical education. He worked in perfect harmony with the younger contingent of the faculty, and seconded every step in the direction of progress. Not himself a laboratory man, he assisted, in every way he could, those who advocated laboratory methods and individual instruction. Though much older than his colleagues he was never an obstacle, and surrendered his chair cheerfully as soon as a teacher in modern methods could be obtained, giving as "emeritus" his most loyal support to his successor. Dr. Ely was his physician in the early part of his last illness, and his tragic death while in close attendance upon Dr. Lindsley was a great blow to the latter. The last time that Dr. Lindsley left his house alive was to attend the funeral of his friend and successor in the chair of medicine, so unexpectedly called away before him.

Evelyn Lyman Bissell, M.D., New Haven.

CHARLES E. PARK, M.D., New Haven.

Evelyn L. Bissell, M.D., was born in Litchfield, Conn., September 10, 1836, son of Major Lyman Bissell, U. S. A., of Litchfield, Conn., and Theresa Maria Skeels of Durham, N. Y.

He entered the Military School of General Wm. H. Russell in New Haven, Conn., after graduating from which he entered the Yale Medical School, graduating in 1860. Upon the opening of the Civil War, he enlisted as second assistant surgeon of the Fifth Connecticut Regiment of Volunteers. He was captured at the battle of Winchester, May 25, 1862, paroled in July, 1862, ordered back to his regiment by General Banks, was recaptured at the battle of Cedar Mountain, August 9, 1862, and confined in Libby Prison until November 20th, when he was released unconditionally. Joining his regiment at Frederick City he was in the battles of Chancellorsville, Gettysburg, Kelly's Ford, Wahatchie, Reseca, Pumpkin Vine Creek, Dallas, Casville, and Kenesaw Mountain. He was then detailed at headquarters upon the staff of General Hooker, and afterwards upon General George H. Thomas's staff. At the close of the war he settled in New Haven upon the practice of his profession until 1872, when he accepted a position under the Peruvian Government as surgeon, remaining until 1875, when he returned to New Haven, resuming his profession as physician and surgeon, in which he had a large practice.

He was surgeon of the Second Regiment, C. N. G., under Colonels Basserman, Bradley, Smith, Graham, and Leavenworth, and surgeon-general upon the staff of Governor Waller during 1883-84. He was for many years pension examiner for the government, a police commissioner of this city, and was a member of the Board of Health at the time of his death.

Dr. Bissell married Sarah M., daughter of Hezekiah Noyes of Woodbury, Conn., November 23, 1865. She died July 19, 1883, leaving one daughter, Beata Whetmore.

Dr. Bissell died December 9, 1905, at the age of sixty-nine years, two months, and ten days.

Theodore Edward Beard, M.D., New Haven.

FREDERICK M. SPERRY, M.D., New Haven.

Theodore Edward Beard, a member of the County and City Medical Society, died at his late residence in New Haven, January 1, 1906, at the age of thirty-nine years, eleven months, after a painful illness of four months' duration.

He received his early education in Huntington, Conn., his birthplace, where he attended the public schools. Later he attended Staples Academy in Easton, Conn.

At the age of twenty-five years he entered Yale Medical School and graduated with the class of 1897.

For over eight years Dr. Beard was engaged in practice of medicine in New Haven, where he enjoyed a success perhaps too great for his strength. Poor health had been his for a number of years, several trips to the West Indies serving only as temporary relief. His cardiac, digestive, and throat difficulties became supplimented by tuberculosis which caused his death.

Dr. Beard was a member of the orders of Masonry and Odd Fellowship, and was highly esteemed. Death came at a time when the material problems of life were simplifying, and he was forced to leave his successes and many friends.

In 1893 Dr. Beard married Miss May Carroll, a native of Northampton, Mass., who survives him.

John Slade Ely, M.A., M.D., New Haven.

PROF. T. MITCHELL PRUDDEN, New York.

John Slade Ely, M.A., M.D., professor of the Theory and Practice of Medicine in the Yale Medical School, died at his home in New Haven, Conn., on February 7, 1906.

Two days before his death, while riding, his horse took fright at a motor-cycle whose driver failed to heed his warning signal. The horse fell and threw Dr. Ely against the pavement, causing a fracture of the skull. Unconsciousness and a deepening coma supervened which the highest medical skill and the most devoted attention of his colleagues failed to relieve.

Dr. Ely, the son of John Cole and Lucy (Slade) Ely, was born in New York on December 4, 1860. His early education was received at private schools in New York. He prepared for college at Williston Seminary, Northampton, Mass., and entered the Sheffield Scientific School at Yale in 1878, graduating with the degree of Ph.B. in 1881. Two fruitful post-graduate years followed, spent largely at Yale, Johns Hopkins, and Berlin. He entered the College of Physicians in New York, completing with distinction the three-year course, and received the degree of M.D. in 1886.

He was a successful candidate for an internship on the First Medical Service at Bellevue Hospital, where he served for a year and a half. The next two years were spent abroad with a group of congenial friends. The larger part of this period was devoted to science. A course in bacteriology under Petri was taken in Koch's laboratory in Berlin. Studies in pathology were carried on with Weigert in Frankfurt and with Arnold in Heidelberg, clinical medicine receiving its share of his attention in Germany as well as later in Paris and London.

On Dr. Ely's return to New York in 1888, he was appointed assistant in pathology in the laboratory of the Alumni Association

of the College of Physicians and Surgeons, Curator of the Museum of Pathology, and pathologist to Bellevue Hospital, positions which he held as long as he remained in New York.

While a large part of his time at this period was devoted to laboratory work and to teaching in pathology, he opened an office and attended to the private practice which gradually developed. He was also assistant physician to the out-patient department of the Roosevelt Hospital.

In 1890 he was elected professor of Histology and Pathological Anatomy in the Woman's Medical College of the New York Infirmary for women and children, sharing in the responsibility of the construction of the new building containing the laboratories over which he presided, and inspiring with his own enthusiasm the practical laboratory work which soon became an important feature in the curriculum.

Twice elected to the office of president of the New York Pathological Society he served the interests of this venerable association in 1896 and 1897 devotedly and well. From 1893 to 1897 he was in charge of the reviews of pathology and bacteriology in the *American Journal of the Medical Sciences*.

In 1897 he was called to the chair of Theory and Practice of Medicine at Yale. In 1897 also he received from Yale the degree of A.M.

At the Sheffield Scientific School he was a member of the Berzelius Society; he became at a later time a member of the Century Association in New York, and of the Association of American Physicians. He was married, April 29, 1893, to Miss Grace Taylor of New York.

Dr. Ely entered his professional career with the advantages of a knowledge of those various phases of natural science, which in later years have been closely linked with the great advances in the science and art of medicine. Before he had completed his undergraduate course he had come to share in the view, then just gaining a foothold in this country, that in an intimate practical knowledge of pathology lay the highest promise of positive advance in the medical art. In this conviction lay the keynote to his endeavors through all the early years of his varied work in New York and the period of more independent and far reach-

ing achievement at Yale. Faithful as he was in the accumulation of the mass of uncorrelated details with which the pathologist is inevitably concerned, he ever cherished the philosophic outlook, and it was evident enough to those who knew him well that his pathology was leading him irresistibly toward the career of a teacher of medical practice, in which later he so conspicuously excelled.

Dr. Ely had a wide knowledge of the history of medicine and was keenly alive to the important lessons, for the investigator and the practitioner, which may be learned from the successes as well as from the failures of the earlier devotees to our profession.

Patient, methodical, and sincere, exact in speech, and with wide outlooks upon science and life, his success as a laboratory teacher was noteworthy, for he linked perspective to his facts, and left with the student a motive for assimilating them.

At the end of a decade of busy life in New York, Dr. Ely had established himself in the high regard of his fellows and his outlook for a successful career as practitioner and teacher in the great city was promising enough. But his ideals pointed to a wider scope in his endeavors than the life of a busy private practitioner could promise, however attractive the gratifications and emoluments of such a career might be. And he cherished the hope of independence as a teacher in paths along which his culture and leanings distinctly led him.

The distractions of New York were many and increasing, the spirit of materialism was widely pervasive, and the life of the scholar which was his choice was not easily to be maintained in the rush and bustle which he might not escape. So when the call to the chair of medicine at New Haven came, he was not loth to shape his course along new pathways leading more directly toward his cherished ideals of life and service.

At New Haven he found loyal colleagues to share his views of medical education, and set to work quietly and unostentatiously as was his wont to develop and co-ordinate the facilities at hand or to build upon new foundations.

The opportunities for teaching at the New Haven Hospital were gradually made available to students; the public dispensary service was developed; and soon through generous gifts from

without a model dispensary building was erected and turned to philanthropic and educational uses.

The fresh outlooks and impulse which Dr. Ely brought to the medical school was reflected in many ways in the improvement of the curriculum, and he cherished the hope of seeing a still closer co-ordination of the work in various departments of the university.

Dr. Ely was a good teacher of medicine, accurate, systematic, and thorough, throwing light upon doubtful cases from the many sources of knowledge which his earlier training made available. He taught his students how to think, how to investigate, how the diagnosis should shape itself out of the logical marshaling of evidence rather than by the more imposing method of shrewd guesses, which too often masquerades as brilliancy.

He was concerned so far as might be with the personal welfare of his students, helpful and interested in season and out of season. The impress of the scholar and the man of science so freely linked to the kindly offices of friend gave him a strong hold upon all who shared his teaching, as well as upon those to whom he was called in professional counsel.

As the years passed, the demands of private practice became more urgent; but with his service to the college, the hospital, the dispensary, and the university, nothing was allowed to interfere.

So Yale found that it had made no mistake in inviting to the important chair of medicine a young man who was a pathologist before he was a practitioner. And the young professor found at Yale a congenial home, inspiring duties, loyal colleagues, and a life of such service to science as had been the dream of the years of his early manhood.

His published papers were few, but these were signalized by the thoroughness and insight which were characteristic of all his work.

He built a house in an attractive part of the city, which with its spacious library, its convenient offices, its workshop, and its dwelling spaces, marked the man of culture, refinement, and resource, and the lover of living and of home.

For Dr. Ely was a many-sided man. He was fond of books, especially books of the elder time. These he was wont to handle gently as a respecer of their persons should, turning readily as one may in fields familiar, to quaint phrases or pictures or the record of forgotten lore. He had a goodly store of these gathered through thirty years of studious life. He was a connoisseur in prints and engravings, and had a noteworthy collection which grew to be of large historic interest. He was fond of music and found it a source of unfailing recreation and keen delight. He had wandered down into Italy in his student days and was not unfamiliar with the treasures of the galleries in Paris and London, Dresden and Berlin; and while not himself an artist his tastes led him into the fields which art inhabits. He loved a fine binding on a book and often whiled away an hour in binding some treasure for himself.

He was an out-of-doors man. He walked and rode; he took long tours awheel. The summer might find him with Mrs. Ely in some far Canadian retreat, or canoeing in New England, or in open quarters beside the sea.

He was a genial, courteous companion, a generous and steadfast friend. The brief story of his life, full rather of service than events, can be set down in words. But the record of his kindness to the poor and the stricken; the sympathy and help he brought to those who sought his counsel; the impress of his generous spirit upon his friends; and the impulse to higher ideals in medicine which his living and his teaching fostered; these all may find expression only in the uplift in life and purpose of those to whom in various ways he ministered.

Daniel Meigs Webb, M.D., Madison.

REYNOLDS WEBB WILCOX, M.D., New York.

Daniel Meigs Webb was born at Madison, Conn., on April 6, 1822, and died there January 1, 1906.

He was a lineal descendant of Richard Webb from Dorsetshire, 1626, emigrant, who settled in Stamford, Conn., in 1655. Reynold Webb, his grandfather was a soldier in the war of the Revolution. Reynold Webb, his father, a soldier in the war of 1812, was graduated M.D. from Yale College in 1819, and practiced in Madison, Conn., until his death in 1856. His mother, Deborah Hopson (Meigs) Webb, daughter of Sergeant Daniel Meigs, a soldier of the war of the Revolution, was a lineal descendant of Vincent Meigs, emigrant from Dorsetshire, 1637, who settled in East Guilford (now Madison), Conn., in 1639, on the place now occupied by a house built by Capt. Jehiel Meigs in 1650 in which Doctor Webb was born. He was graduated A.B., 1846, A.M. and M.D., 1849 at Yale College, and practiced his profession at Madison, Conn., until his death; father and son in their practice covering the period from 1819 to 1906.

Dr. Webb was senior warden of the church of the Holy Trinity (Episcopal), Clinton, Conn., a member of Madison Lodge No. 87, F. & A. M. of Franklin Chapter and Harmony Commandery, No. 2 of New Haven, Conn. He was a member of the New Haven County Medical Association and the Connecticut State Medical Society. His only surviving relatives are his widow, Mary Elizabeth (Elderkin) Webb, a descendant of Judge Elderkin of Windham, Conn., and a nephew, Dr. Reynold Webb Wilcox of New York City.

Dr. Webb was always a student. Possessed of a remarkable memory his fund of information was practically inexhaustible. He read medicine, not only in English, but in Italian and French as well, until the week of his death. As a practitioner he employed

sound judgment, infinite patience, and conscientious faithfulness to the best teachings of modern medicine. He maintained his reading acquaintance with the classics of his college days, and his sonorous rendering of Dante, Tasso, or Ariosto was as scholarly as it is unusual.

With great kindness of heart he lived the life of a typical family physician, did his duty thoroughly, and died commanding the respect, love, and devotion of all those who appreciate the noble qualities which go to make up the best type of a medical gentleman.

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Curtice Harvey Bill, M.D., Bridgeport.

GEORGE L. PORTER, M.D., Bridgeport.

The death of Dr. Bill removes from the Connecticut Medical Society a loyal member. Constant in its support by personal commendation and frequent attendance at the State meetings, and, as one of its delegates at the conventions of the National Association — diligent and self-denying in the performance of the manifold duties of his profession — patriotic, at the time and in circumstances where such action demanded moral courage and manly self-respect, he enhanced by his civil and military record the reputation of the society and augmented intelligent respect for the profession of medicine.

Dr. Curtis Harvey Bill was the descendant of a long line of medical practitioners. A direct ancestor was the famous Dr. Thomas Bill of Bedfordshire, England, a personage of high repute, who about 1549 A.D. was summoned to attend Princess Elizabeth.

Dr. Bill was born at Albany, Vermont, on the 2d of July, 1835; he died in New York City on the 24th of July, 1905. His early life was spent in the Green Mountain State, influenced by the traditions and customs of its sturdy, self-respecting and public-spirited people — here were developed the inherited qualities of a vigorous physique — he was trained in its public schools, and here a sense of personal responsibility for the welfare of civic affairs, both state and national, was so firmly impressed upon his character that it was ever a determining factor in his later life. Amid varying circumstances he never wavered in the performance of those duties which he considered devolved upon him as an American citizen. In early manhood he was exposed to many political temptations and dangers, by which few men are tried, to force him into disloyal acts, but, amid them all, he remained true and faithful to the principles of liberty animating

the founders of the Republic, and to a feeling of reverence for the examples of patriotism furnished by the men of the American Revolution, which is the birthright of everyone born upon the fighting-ground which witnessed the exploits of Stark and Ethan Allen. His education, commenced with public schools, was continued at Barre Academy. He entered the office of Dr. Chandler of Montpelier for the study of medicine, in 1854 attended lectures in the medical department of Dartmouth College and of the University of Vermont, and at the University of New York was graduated in 1859. He went south and settled in Clarksville, Tenn. His diligence and ability soon won the confidence of the community, but, for him, the time was unpropitious. The public sentiment was fired with a passionate hatred of the North, with the determination to disrupt the Union, and to establish a Southern Confederacy. Popular opinion decreed that all who did not favor and support their political opinions were public enemies, and particularly so, if the individual came from a state north of Mason and Dixon's Line. That the doctor might have accepted an offered commission as surgeon in the Confederate Army is abundant proof of his good local reputation as a medical practitioner, acquired during his short stay in a strange land,—that he was driven from his new home by his declination to accept this commission by a Vigilance Committee, is evidence of their overmastering hostility. This experience and the knowledge of the long-cherished and firmly established determination of the Southern people to dissolve the Union convinced him that, for its preservation, the nation demanded the loyal services of every patriot, and upon reaching Louisville, then the headquarters of General William T. Sherman, he joined the Union Army and was assigned to duty with the Fifteenth United States Infantry. He served with this command in the armies of the Ohio and the Cumberland from October, 1861, until September, 1863, was present at many of the great battles fought by the western armies during this time, and was personally complimented by General John H. King, U. S. A., "for gallant and faithful service on the battle-field." In the fall of 1863 he was appointed surgeon-in-chief of the Howard Hospital at Nashville, and here performed many important surgical operations. In 1864 at the personal re-

quest of Governor, afterward President, Johnson, he was commissioned surgeon of the Fifth Tennessee Cavalry — the former surgeon having been killed by guerrillas — served with this command until the close of the Civil War, and was mustered out in August, 1865. After the war he settled in Bridgeport, Conn., and for the last thirty-four years has been occupied in continuous professional work. His varied medical experience, both civil and military, amply prepared him for the duties of his new position. His courteous demeanor, faithful attendance upon the sick, prompt response to calls of distress, and a general recognition of his scientific attainments, secured a numerous and highly desirable clientele. For many years he has been regarded by the public as a successful, trustworthy physician; by his professional associates, as an influential "Elder Statesman." To his patients, without regard to other circumstances than their necessities, his attentions were conscientious and unremitting, often, and especially during the last year of his life, hearing and relieving the complaints of those whose sickness was far less dangerous than that which even then threatened his own life. His reputation as a reliable and capable physician, together with a knowledge of his influence in the community, gained for him the position of medical examiner for many life insurance companies. Upon the organization of the surgical and medical staff of the Bridgeport Hospital he was appointed one of its members and has annually been reappointed, — for the first ten years assigned to active service as physician and surgeon, and since that time promoted to the consulting staff. To this work, as in his other responsible positions, he generously contributed valuable time, professional acquirements, patient and kindly sympathy, — in the wards, to the stranger as well as to acquaintance, he was both doctor and friend.

On September 20, 1865, he married Mary J. Worcester, a niece of Joseph E. Worcester, LL.D., the famous lexicographer, — is survived by the widow and three children, — Mary E., Dr. Philip W., and Harold C. Bill.

Notwithstanding his strenuous southern experience he was not an unreasonable partisan. Although his political affiliations were Republican, he found no time nor cherished any desire for preferment in office. His dignified bearing and conservative con-

versation revealed scant evidence of his experiences with Secession Vigilance Committees and of familiarity with the stirring military events of campaigns and battle-fields.

He was a member of Christ Episcopal Church. His death resulted from a malignant abdominal tumor and followed a protracted and complicated intestinal resection. In preparation for this operation — imperative — from which he expressed but little hope of recovery, he arranged his business affairs, bade farewell to some of his more intimate friends, and with sublime confidence, like a Christian soldier in a desperate fight, submitted the issue of life and death to the Divine Wisdom. The unexpected news of his dangerous sickness and untimely death was a shock to the community.

In professional and social affairs he was ever an entertaining associate and a welcomed guest. He was a member of the Bridgeport, Fairfield County, Connecticut, and American Medical Societies, the Grand Army of the Republic, the Brooklawn and Contemporary Clubs.

Cordial, courteous, helpful in the many relations that have united us; honorable in his dealings; loyal to patients and to professional brethren; zealous in claiming and sturdy in sustaining the rights and achievements of medicine, indignantly opposing all forms of quackery; constant in opinion, amenable to reason but not wavering in judgment; influenced by patriotic motives and high ideals; trusted and beloved by patients, old and young, in every rank of life, his memory will long be cherished by professional associates, his record will give additional value to our archives, and his death be mourned as a separation from one who was an exemplary physician, a Christian gentleman, and a valued friend.

George Beriah Bouton, Westport, Conn.

LAUREN M. ALLEN, M.D., South Norwalk.

Dr. George Beriah Bouton was born in Troy, N. Y., April 27, 1828, and died in the Odd Fellows' Home in Thomasville, Florida, November 6, 1905. Dr. Bouton was the son of Stephen Bouton, a descendant of John Bouton, one of the earliest settlers of Norwalk.

At the age of nine years he was placed in the Episcopal Institute in Troy, N. Y., where he remained three or four years, after which he went with an uncle in a hardware store for three years.

The next four years he occupied a position in the establishment of E. Corning & Co. in New York City. He then went to New Haven with his parents, and began the study of medicine with Dr. Chas. Hooker, professor of anatomy in Yale College. He graduated from Yale in 1856, and later from a New York medical college.

He located in New York City, and received the appointment of examining physician and deputy coroner, and at once entered upon these duties, and held the position for three consecutive terms of three years each, except an interval of nearly a year, which was spent as surgeon to General Walker's troops in Nicaragua.

While in New York he invalidated a will involving over two hundred thousand dollars by his examination of a body, and introduction, for the first time in legal annals, of portions of the body which had been buried nine months, to illustrate testimony in a civil suit. For this he received a fee of three thousand dollars.

In 1861 Dr. Bouton married Frances, daughter of Andrew C. Nash of Westport, Conn. In January, 1865, he removed to Westport, where he had an extensive practice until he retired in 1883.

After retiring he traveled extensively, both in Europe and in this country. While at Saratoga he had an attack of paralysis

July 18, 1897, from which he never fully recovered; this was followed by another attack some years later, from the effect of which he died November 6, 1905. Dr. Bouton was buried November 14th, the funeral services being conducted in Christ Church, Westport, Conn., of which he was a member, and the burial with masonic services in Willow Brook Cemetery in that town. Dr. Bouton was a member of the Fairfield County and of the Connecticut State Medical Association.

He was a Mason, belonging to a New Haven Commandery, and held several offices, and was also an Odd Fellow.

In politics he was a Democrat. Personally Dr. Bouton was pleasant and social, and was held in high esteem by a large circle of friends.

Lowell Holbrook, M.D., Thompson.

J. B. KENT, M.D., Putnam.

Dr. Lowell Holbrook was born in the town of Thompson, Conn., October 6, 1818. He was the son of Dr. Horatio Holbrook, who for upwards of forty years practiced his profession in the town of Thompson, and the surrounding towns of Massachusetts and Rhode Island.

After completing his education in the public schools of Thompson he entered Monson Academy, Monson, Mass., from which he graduated in 1836. Later he was for two years a student of Brown University.

In 1844, Dr. Holbrook entered the University of New York, studying two years, again re-entered in 1848 and received his medical degree from that institution in 1849. In the interim between 1844 and 1848, he practiced medicine with his father in his native town. In 1849 he opened an office at Brooklyn, N. Y., but on the death of Dr. Bowen of Thompson in 1851, he gave up his Brooklyn practice and moved to Thompson, his native town; and from 1851 to within about three years of his death, he had been actively engaged in the practice of his profession which he loved, and which he honored for so many years.

In 1845, Dr. Holbrook married Mary Fisher, a native of Killingly, Conn., and daughter of William and Laura Fisher. She died November 16, 1890. Mrs. Holbrook was a most estimable lady, beloved by everybody who knew her, and was devoted to high ideals and the noble things of life.

Dr. Holbrook was a staunch Republican in politics. He filled the office of town health officer for years as well as other offices of responsibility in the gift of his native town. In 1879 he was elected as representative to the General Assembly, and during his term of office was ever faithful in advancing the interests of those who had honored him with their confidence, being a member of

several important committees. He was interested in every moral reform, and was an active member of the Congregational Church in his native town.

He was identified with the Grand Army of the Republic, having served during the Civil War as surgeon of the Eighteenth Connecticut Volunteer Infantry, enlisting in 1863, and remaining with his regiment until peace was declared; during which period his regiment participated in many important engagements, among them Summit Point, Va., Piedmont, Snickers Ford, and Winchester. He was taken prisoner at the battle of Winchester, June 15, 1863, and confined for months in Libby Prison. He was more than an ordinary surgeon in his day, and was a member of the United States Pension Board during the latter years of his life, resigning only a short time before his death.

He was a former president of the Connecticut State Medical Society, a position he held with honor.

As a man Dr. Holbrook embodied the fundamental traits of good citizenship, and established himself in the hearts and confidence of those among whom he lived and labored.

It was my good fortune to be intimately acquainted with him for thirty years, and during that time we had been brought together professionally a great many times; and it gives me great pleasure to bear testimony as to his professional skill, and to his unflinching devotion to his patients. He was always ready to respond to the summons of the sick and suffering and give his best services, whether that summons came at high noon or at midnight.

I have always found Dr. Holbrook a valuable consultant. He was a good diagnostician; and was always ready to express an opinion in regard to any case, and give his reason therefor. He was a man of good judgment and well versed in the therapeutics of his day, possessing a thorough knowledge of remedies and what they were likely to accomplish. There was no attempt at display in his treatment, or pretense of attempting to know more than he was conscious of knowing. He was modest in all that he attempted to do, and was greatly attached to his profession, considering it honorable and deserving his highest devotion.

His manner was grave, dignified, and courteous; in speech, calm, deliberate, and cautious; in action, energetic and untiring.

He was strong in his convictions, and when he believed he was in the right, no influence could change his opinion. He was a man of quick conception, with a well-trained mind, possessing a remarkable memory, and a ready debater. He retained all of these faculties until the end of life. He was a diligent student, and read the journals and periodicals of progressive medicine until failing eyesight prevented him from longer doing so; after which his sisters spent hours daily, reading to him.

Much more might be said, but this is enough. In paying this tribute to Dr. Holbrook, I am led to look back upon my own life, and call to mind the many instances in the earlier years of my practice, in which he has, through his skill, and more mature experience, helped me over some of those rough places which are sure to arise in the experience of every young practitioner; thus he shared with me many burdens and responsibilities. Dr. Holbrook lived to a ripe old age, always enjoying good health up to about four years of his death, when his sight began to fail from gradually developing cataract in both eyes. This finally compelled him to give up practice, though he persisted in moving about, and was a constant attendant at the regular meetings of the Pension Board up to a few months of his death. He died October 16, 1905, from pulmonary oedema, at the age of eighty-seven years. Thus ended a long, useful, and devoted life, possessing many traits of character which others might do well to imitate.

Roger Charles Downey, M.D., Middletown.

ARTHUR J. CAMPBELL, M.D., Middletown.

Roger Charles Downey, M.D., son of Jeremiah Downey, was born in Deerpark, Ireland, in 1866, and died in 1904 at the age of thirty-eight years. At an early age he came to America, and for a number of years was engaged in the insurance business in Waterbury, Conn., until he decided to take up the study of medicine. He entered the Jefferson Medical College of Philadelphia in the class of 1888, finishing his first year in that college. The following year he continued his medical studies in the University of Vermont, from which he was graduated in 1891. After his graduation he took a post-graduate course in Bellevue. He then began the practice of medicine in Portland, Conn., and after four years during which he established a large and successful practice, he returned to his native country and entered the Rotunda Hospital in Dublin, taking a post-graduate course of six months in obstetrics and gynecology. He then returned to Middletown where he remained except for a brief time until his death in 1904. In 1897 he married Miss Mary Bernadine Curran, daughter of John and Mary Curran of Portland, Conn. He was a man of robust physique, jovial in disposition, kind hearted, and beloved by his patients. About a year before his death he began to fail in health but continued to care for his patients until the fall of 1903, when he left Middletown and returned to Hartford, intending to do special work, as the hardships of general practice gave him no chance to recover his lost health, but still continuing to fail he gave up his practice and put himself under the care of a specialist in New York. Having regained to some extent his impaired health he returned to Middletown and resumed his practice in this city. His friends and patients were pleased to welcome him and to note his improved condition. He was an enthusiastic member of the Knights of Columbus, holding the

office of medical examiner of Freestone Council, while in Portland. Always interested in the advancement of his profession, he contributed many valuable papers at the meetings of his medical societies. Only a week before his unexpected death he read a paper on the treatment of nephritis, a disease of which he was only too familiar from his personal experience, and which was the remote cause of his death, following an attack of facial erysipelas.

His funeral was largely attended from the home of his father-in-law, John Curran, many being present from the medical profession as well as the numerous societies of which he was a member, all joining in the feeling that they had come to witness the last sad rites not only of a physician but of a friend.

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MEMBERS OF THE SOCIETY.

HONORARY MEMBERS.

| | |
|---------------------------|----------------------|
| ADRIAN THEODORE WOODWARD, | Brandon, Vt. |
| WILLIAM McCOLLOM, | Brooklyn, N. Y. |
| AGRIPPA NELSON BELL, | Brooklyn, N. Y. |
| JOHN SHAW BILLINGS, | New York City, N. Y. |
| THOMAS ADDIS EMMETT, | New York City, N. Y. |
| WILLIAM HENRY WELCH, | Baltimore, Md. |
| ROBERT FULTON WEIR, | New York City, N. Y. |
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| EDWARD G. JANEWAY, | New York City, N. Y. |
| HON. CHARLES E. GROSS, | Hartford, Conn. |
| DAVID WEBSTER, | New York City, N. Y. |
| SIR JAMES GRANT, | Ottawa, Canada. |
| HENRY O. MARCY, | Boston, Mass. |
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| REYNOLD WEBB WILCOX, | New York City, N. Y. |
| WILLIAM OSLER, | Oxford, England. |
| GEORGE M. STERNBERG, | Washington, D. C. |
| FRANCES DELAFIELD, | New York City, N. Y. |
| WILLIAM T. BULL, | New York City, N. Y. |
| MAURICE H. RICHARDSON, | Boston, Mass. |

ACTIVE MEMBERS.

The names of those who have been Presidents are in capitals.

HARTFORD COUNTY.

Frederick S. Crossfield, M.D., Hartford, President.

Edward G. Fox, M.D., Wethersfield, Vice-President.

Edward R. Lampson, M.D., Hartford, Secretary.

Councilor — George R. Shepherd, M.D., Hartford.

Censors — Robert M. Clark, M.D.,

Oliver C. Smith, M.D.,

Thomas F. Kane, M.D.

Annual Meeting First Tuesday in April. Semi-Annual Meeting Fourth Tuesday in October.

Hartford:

GURDON W. RUSSELL, No. 207 Farmington Avenue.

Horace S. Fuller, No. 95 Trumbull Street.

Nathan Mayer, No. 904 Main Street.

David Crary, No. 926 Main Street.

John B. Lewis, No. 56 Prospect Street.

Gustavus P. Davis, No. 56 Prospect Street.

Charles E. Froelich, No. 103 Pratt Street.

Harmon G. Howe, No. 137 High Street.

William W. Knight, No. 96 Trumbull Street.

Thomas D. Crothers, No. 50 Fairfield Avenue.

George L. Parmele, No. 65 Pratt Street.

Ellen H. Gladwin, No. 705 Asylum Avenue.

SAMUEL B. ST. JOHN, No. 68 Pratt Street.

George R. Shepherd, No. 32 Farmington Avenue.

Frederick S. Crossfield, No. 75 Pratt Street.

Marcus M. Johnson, No. 122 Woodland Street.

William D. Morgan, No. 49 Pearl Street.

John F. Axtelle, No. 635 Main Street.

George K. Welch, No. 103 Pratt Street.

Phineas H. Ingalls, No. 112 High Street.

Edward K. Root, No. 49 Pearl Street.

Luther A. Davison, No. 11 Pratt Street.

John Howard, No. 119 Trumbull Street.

Charles D. Alton, No. 86 Farmington Avenue.

Oliver C. Smith, No. 44 High Street.

Joseph E. Root, No. 67 Pearl Street.

William Porter, Jr., No. 179 Allyn Street.

Frederick T. Simpson, No. 122 High Street.

George R. Miller, No. 51 Church Street.

Charles C. Beach, No. 53 Trumbull Street.

Gideon C. Segur, No. 67 Farmington Avenue.
 George C. Bailey, No. 85 Church Street.
 Alva E. Abrams, No. 78 High Street.
 Charles E. Taft, No. 98 High Street.
 Thomas F. Kane, No. 517 Main Street.
 Arthur J. Wolff, No. 1 Spring Street.
 Ansel G. Cook, No. 179 Allyn Street.
 Edwin A. Down, No. 902 Main Street.
 Daniel F. Sullivan, No. 64 Church Street.
 Joseph H. Cahill, No. 1145 Main Street.
 Everett J. McKnight, No. 110 High Street.
 Benjamin S. Barrows, No. 189 High Street.
 Michael A. Bailey, No. 434 Main Street.
 George N. Bell, No. 44 High Street.
 Frank L. Waite, No. 68 Pratt Street.
 Oliver K. Isham, No. 211 High Street.
 Franklin L. Lawton, No. 295 Main Street.
 John H. Rose, No. 75 Pratt Street.
 John B. Waters, No. 103 Trumbull Street.
 Joseph B. Hall, No. 10 Garden Street.
 Edward A. Elmer, No. 813 Park Street.
 Janet M. Weir, No. 282 Sigourney Street.
 John F. Dowling, No. 1244 Main Street.
 Philip D. Bunce, No. 98 High Street.
 Homer L. Law, No. 100 Washington Street.
 Wilton E. Dickerman, No. 53 Trumbull Street.
 John B. Boucher, No. 25 Charter Oak Avenue.
 Levi B. Cochran, No. 43 Farmington Avenue.
 James H. Naylor, No. 207 Main Street.
 Charles P. Bottsford, No. 1393 Main Street.
 James H. Standish, No. 340 Windsor Avenue.
 Michael H. Gill, No. 36 Pearl Street.
 John B. McCook, No. 390 Main Street.
 John W. Felty, No. 5 Whitney Avenue.
 George E. Sleeper, No. 1333 Main Street.
 Frank S. Snow, Allyn House.
 Howard F. Smith, No. 926 Main Street.
 Thomas W. Chester, No. 110 High Street.
 Joseph A. Kilbourn, No. 771 Park Street.
 Philip P. Carlon, No. 265 Franklin Avenue.
 Thomas B. Enders, No. 3 Highland Street.
 Charles A. Goodrich, No. 5 Haynes Street.
 Alfred M. Rowley, No. 280 Main Street.
 Irving DeL. Blanchard, No. 73 Windsor Avenue.
 Emil G. Reinert, No. 30 Lewis Street.
 Arthur D. Hayes, No. 42 High Street.
 Herman A. Tyler, Jr., No. 641 Main Street.
 Frederick L. McKee, No. 153 Ashley Street.
 *Edward R. Lampson, No. 53 Trumbull Street.
 William M. Weaver, No. 115 Edwards Street.
 E. Terry Smith, No. 36 Pearl Street.
 William H. Fitzgerald, No. 904 Main Street.
 Emma J. Thompson, No. 105 Trumbull Street.
 Patrick J. Ryan, No. 318 Park Street.
 Walter R. Steiner, No. 4 Trinity Street.
 Ellen P. O'Flaherty, No. 140 Main Street.

Thomas A. Mulcahey, No. 272 Park Street.
 Marian W. Williams, No. 772 Asylum Street.
 Allen H. Williams, No. 772 Asylum Street.
 C. Brewster Brainard, No. 2 Garden Street.
 Eckley R. Storrs, No. 179 Allyn Street.
 Ernest A. Wells, No. 904 Main Street.
 William H. Van Strander, No. 73 Church Street.
 James W. Conklin, No. 51 Pratt Street.
 James M. Keniston, No. 20 Hudson Street.
 Orrin R. Witter, No. 44 High Street.
 Michael R. Laden, No. 6 Maple Avenue.
 Frederick Buell Willard, No. 137 High Street.
 Ernest A. Wells, No. 904 Main Street.
 Henry Ely Adams, No. 108 Church Street.
 Wyeth Elliott Ray, No. 56 Prospect Street.
 William T. Owens, No. 397 Capitol Avenue.
 John C. Pierson, Highland Court.
 Charles Fitzgerald, No. 904 Main Street.
 Henry F. Stoll, No. 417 Albany Avenue.
 Paul B. Sweet, No. 179 Allyn Street.
 Charles J. Fox, No. 36 Pearl Street.
 Mark S. Bradley, No. 36 Pearl Street.
 Harry C. Clifton, No. 58 Ashley Street.
 Robert S. Starr, No. 75 Pratt Street.
 Harry K. Loew, No. 108 Church Street.
 Arthur C. Heublein, No. 110 High Street.
 Charles S. Stern, No. 75 Pratt Street.

Berlin.

Robert E. Ensign.
 Charles A. Gillin.

East Berlin:

George W. Lawrence.

Bristol.

William W. Horton.
 Arthur S. Brackett.
 William M. Curtis.
 Henry A. Carrington.

Canton—Collinsville:

George F. Lewis.
 William H. Crowley.
 Paul Plummer.
 Edward A. Hotchkiss.
 Ralph B. Cox.

East Hartford.

Thomas S. O'Connell.
 Walter G. Murphy.
 Julius E. Griswold.

Burnside:

Franklin H. Mayberry.

East Windsor—Broad Brook:

Howard O. Allen.
 Harold S. Backus.

Warehouse Point:

Michael J. Kelly.
 George E. Porter.

Enfield—Thompsonville.

Edward F. Parsons.
 George T. Finch.
 Henry G. Varno.
 Thomas F. Reardon.
 Michael J. Dowd.
 John L. Bridge.

Hazardville:

Simon W. Houghton.

Granby.

Rollin D. Chatfield.

Farmington.

Franklin Wheeler.
 Charles Carrington.

Glastonbury.

Charles G. Rankin.
 William S. Kingsbury.

*Exempted from taxation.

South Glastonbury:

Henry M. Rising.
Harry M. Rising.

Manchester.

Francis H. Whiton.
Calvin Weidner.
Noah A. Burr.

East Manchester:

Thomas G. Sloan.

South Manchester:

William R. Tinker.
Thomas H. Weldon.
William S. Gillam.

New Britain.

*George Clary.
*Edwin B. Lyon.
Jay S. Stone.
Erastus P. Swasey.
Michael J. Coholan.
George J. Holmes.
Lawrence M. Cremin.
Wilbur P. Bunnell.
Samuel W. Irving.
Robert M. Clark.
Hermann Strosser.
Arvid Anderson.
Kenneth E. Kellogg.
Edward L. Whittemore.
Thomas E. Reeks.
William W. Brackett.
Louis D. Henn.
Ernst T. Fromen.
Catherine H. Travis.

Plainville.

John N. Bull.
Theodore G. Wright.

Rocky Hill.

Orran A. Moser.

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Charles M. Wooster.
John P. Carver.

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Willard G. Steadman.
William R. Miller.
William H. Cushing.

South Windsor.

Mary S. Tudor.
Henry A. Deane.

Suffield.

Matthew T. Newton.
Philo W. Street.
William M. Stockwell.

West Suffield.

William E. Caldwell.

West Hartford.

Charles O. Purinton.

Wethersfield.

Edward G. Fox.
Arthur W. Howard.

Windsor.

Newton S. Bell.
Leander Z. Skinner.
Howard F. King.

Windsor Locks.

Joseph A. Coogan.
William J. Coyle.
Myron P. Robinson.
Richard A. Outtersen.

NEW HAVEN COUNTY.

Ralph A. McDonnell, M.D., New Haven, President.

Frank H. Wheeler, M.D., New Haven, Vice-President.

William S. Barnes, M.D., New Haven, Secretary.

Councilor — Charles J. Foote, M.D., New Haven.

Censors. — Jay W. Seaver, M.D., Samuel D. Otis, M.D., Frederick G. Graves, M.D.

Annual Meeting, third Thursday in April; semi-annual, third Thursday in October.

New Haven.

John Nicoll, No. 70 Howe Street.
T. H. Bishop, No. 215 Church Street.
FRANCIS BACON, No. 32 High Street.
A. E. Winchell, No. 60 Pearl Street.
Robert S. Ives, No. 339 Temple Street.
Arthur Ruickoldt, No. 71 Olive Street.
Walter Judson, No. 1145 Chapel Street.
Frederick Bellosa, No. 209 Orange Street.
S. D. Gilbert, No. 27 Wall Street.
J. P. C. Foster, No. 109 College Street.
W. H. Carmalt, No. 87 Elm Street.
T. H. Russell, No. 137 Elm Street.
F. H. Whittemore, No. 69 Elm Street.
C. P. Lindsley, No. 37 Elm Street.
H. Fleischner, No. 928 Grand Avenue.
M. Mailhouse, No. 151 Meadow Street.
M. C. O'Connor, No. 882 State Street.
Charles E. Park, No. 42 Elm Street.
F. E. Beckwith, No. 139 Church Street.
Gustavus Eliot, No. 209 Church Street.
J. E. Stetson, No. 106 High Street.
J. F. Luby, No. 667 Grand Avenue.
William W. Hawkes, No. 35 High Street.
Frank H. Wheeler, No. 221 Crown Street.
Herbert E. Smith, Medical College.
Benjamin L. Lambert, No. 578 Howard Avenue.
F. W. Wright, No. 48 Pearl Street.
Edward K. Roberts, No. 244 Grand Avenue.
Oliver T. Osborne, No. 252 York Street.
Lucy C. Peckham, No. 141 Green Street.
William G. Daggett, No. 189 Church Street.
Louis S. DeForest, No. 335 Orange Street.
Henry L. Swain, No. 232 York Street.
Mary B. Moody, Sherland Avenue, cor. E. Grand Avenue.
G. F. Converse, No. 1 Whalley Avenue.
J. H. Townsend, No. 39 College Street.
T. M. Cahill, No. 40 Pearl Street.
C. J. Foote, No. 26 Elm Street.
Marvin Smith, No. 73 Pearl Street.
S. J. Maher, No. 212 Orange Street.
Jay W. Seaver, No. 25 Lynwood Street.
Louis B. Bishop, No. 356 Orange Street.
H. W. Ring, No. 187 Church Street.
W. C. Welch, No. 44 College Street.
A. O. Baribault, No. 528 Chapel Street.
Rollin McNeil, No. 149 Bradley Street.
Edward M. McCabe, No. 22 Elm Street.
James M. Reilly, No. 337 Cedar Street.
Clarence E. Skinner, No. 67 Grove Street.
N. R. Hotchkiss, No. 219 York Street.
Benjamin A. Cheney, No. 40 Elm Street.
Charles A. Tuttle, No. 196 York Street.
Harry B. Ferris, No. 118 York Street.
Henry F. Klenke, No. 730 Grand Avenue.
Leonard W. Bacon, Jr., No. 294 Elm Street.

Paul S. Robinson, No. 164 Grand Avenue.
 Arthur N. Alling, No. 199 York Street.
 R. A. McDonnell, No. 1142 Chapel Street.
 E. P. Pitman, No. 52 Sylvan Avenue.
 Isaac N. Porter, No. 198 Dixwell Avenue.
 Ernest H. Arnold, No. 46 York Square.
 Robert E. Peck, No. 56 Howe Street.
 Daniel A. Jones, No. 746 Chapel Street.
 William C. Wurttemberg, No. 28 Elm Street.
 Chauncey S. Lamb, No. 776 Howard Avenue.
 Frederick N. Sperry, No. 42 College Street.
 William F. Verdi, No. 13 Elm Street.
 Charles J. Bartlett, Medical College.
 Morris D. Slattery, No. 566 Howard Avenue.
 Ward H. Sanford, No. 60 Edwards Street.
 William M. Kenna, No. 145 Olive Street.
 Leonard C. Sanford, 347 Temple Street.
 Willis H. Crowe, No. 106 Whalley Avenue.
 Archibald McNeil, No. 51 Livingstone Street.
 Charles H. Robbins, No. 326 Grand Avenue.
 Louis M. Gompertz, 1161 Chapel Street.
 Alfred G. Nadler, No. 122 Olive Street.
 William Sprenger, No. 366 George Street.
 Joseph B. Monahan, No. 696 Howard Avenue.
 Frederick C. Bishop, No. 1223 Chapel Street.
 James H. J. Flynn, No. 840 Howard Avenue.
 Frank A. Kirby, No. 235 Dixwell Avenue.
 William J. Sheehan, No. 619 Howard Avenue.
 John F. Sullivan, No. 205 Blatchley Avenue.
 Edward F. McIntosh, No. 192 York Street.
 Nicola Mariani, No. 110 Green Street.
 Samuel M. Hammond, No. 105 College Street.
 George I. Hemingway, No. 86 Broadway.
 Bernard E. Henrahan, No. 603 Dixwell Avenue.
 James S. Maher, No. 215 Orange Street.
 Percy D. Littlejohn, No. 564 George street.
 A. W. Marsh, No. 1012 Whalley Avenue.
 William N. Winne, No. 58 Harrison Street.
 *William S. Barnes, No. 526 Howard Avenue.
 Clarence L. Kilbourn, No. 202 Blatchley Avenue.
 Theodore D. Pallman, 420 Winthrop Avenue.
 Gilbert T. McMaster, No. 42 Trumbull Street.
 Henry H. Smith, No. 43 Elm Street.
 Julia E. Teele, No. 153 Franklin Street.
 Harry L. Welch, No. 44 College Street.
 Otto G. Ramsay, No. 251 Church Street.
 Thomas J. Bergin, No. 565 Howard Avenue.
 Francis P. Heery, No. 153 Olive Street.
 Thomas V. Hynes, No. 27 College Street.
 Harry M. Steele, No. 226 Church Street.
 Willis E. Hartshorn, No. 1138 Chapel Street.
 Richard F. Rand, No. 246 Church Street.
 Edward S. Moulton, No. 38 Elm Street.

*Exempted from taxation.

Timothy Francis Cohane, No. 600 Howard Avenue.
 William James Butler, No. 712 Howard Avenue.
 David Bercinsky, No. 360 George Street.
 Louis A. Notkins, 700 Howard Avenue.
 Terrence S. McDermott, No. 225 Columbus Avenue.
 David L. Rundlett, 1543 Chapel Street.
 Francis H. Reilly, No. 312 Columbus Avenue.
 Nelson A. Ludington, No. 96 Park Street.
 Dwight M. Lewis, No. 438 George Street.
 Seymour L. Spier, No. 348 Crown Street.
 William H. Bean, 252 York Street.
 John G. Hugo, 1245 State Street.
 E. Reed Whittemore, 69 Elm Street.

Ansonia.

Louis E. Cooper.
 Louis H. Wilmot.

Branford.

C. W. Gaylord.
 A. J. Tenny.

Stony Creek:

George H. Townsend.

Cheshire.

Charles N. Denison.

Derby.

F. N. Loomis.
 Elmer T. Sharpe.
 Edward A. Haire.
 Royal W. Pinney.
 Edward O'R. Maguire.

East Haven.

Charles W. Holbrook.

Guilford.

George H. Beebe.
 Redfield B. West.

Hamden.

Walter S. Lay.

Mt. Carmel:

George H. Joslin.

Madison.

John M. Shepard.

Meriden.

C. H. S. Davis.
 *N. Nickerson.
 A. W. Tracey.

E. T. Bradstreet.
 J. D. Eggleston.
 Edward W. Smith.
 Ava H. Fenn.
 E. W. Pierce.
 S. D. Otis.
 F. P. Griswold.
 E. D. Hall.
 H. W. Delesdernier.
 H. A. Meeks.
 William Galvin.
 J. W. H. La Pointe.
 Joseph A. Cooke.
 Albert E. Von Tobel.
 Louis F. Wheatley.

Milford.

E. B. Heady.
 E. C. Beach.
 A. L. Tuttle.

Naugatuck.

Thomas M. Bull.
 Frederick Spring.
 James W. Robbins.
 William J. Delaney.
 Edwin H. Johnson.
 Frank J. Tuttle.
 John J. Carroll.

North Haven.

R. B. Goodyear.
 Edwin H. Bidwell.
 Gould S. Higgins.

Orange—West Haven:

J. F. Barnett.
 William V. Wilson.
 Durell Shepard.
 Charles D. Phelps.
 Victor A. Kowalewski.

*Exempted from taxation.

Paul B. Kennedy.
Charles A. Bevan.

Oxford.

*Lewis Barnes.

Seymour.

Frank A. Benedict.
Elias W. Davis.

Wallingford.

J. D. McGaughey.
C. H. Atwater.
William S. Russell.
William P. Wilson.
Caroline North.
David R. Lyman.

Waterbury.

F. E. Castle.
E. W. McDonald.
Walter L. Barber.
C. W. S. Frost.
CHARLES S. RODMAN.
J. M. Benedict.
Carl E. Munger.
Bernard A. O'Hara.
John F. Hayes.
Augustin A. Crane.
Patrick T. O'Connor.
John D. Freney.

Charles A. Hamilton.
George O. Robbins.
Charles H. Brown.
Edward W. Goodenough.
Myron L. Cooley.
Frederick G. Graves.
John R. Poore.
James L. Moriarty.
George W. Russell.
Daniel L. Maloney.
Thomas J. Kilmartin.
Ernest D. Chipman.
Charles A. Monagan.
Henry G. Anderson.
Henry E. Hungerford.
Harry E. Ballard.
Nelson A. Pomeroy.
Thomas J. Lally.
Patrick J. Dwyer.
Louis J. Thibault.
William A. Goodrich.
Adelard D. David.
John E. Farrell.
Charles Engelke.
Willard F. Allen.
Thomas J. McLarney.

Waterville:

Joseph S. Holroyd.

224

NEW LONDON COUNTY.

Charles E. Brayton, M.D., Stonington, President.

Harry M. Lee., M.D., New London, Vice-President.

*Edward C. Chipman, M.D., New London, Secretary.

Councilor — Rush W. Kimball, M.D., Norwich.

Censors — L. S. Paddock, M.D., William Witter, M.D., F. N. Braman, M.D.

Annual Meeting, first Thursday in April; semi-annual, first Thursday in October.

Colchester.

Raymond R. Gandy.

East Lyme—Niantic:

Frederick H. Dart.
Edwin Atkinson.

Griswold—Jewett City:

George H. Jennings.

Groton.

Edmund P. Douglass.
Frank W. Hewes.

Noank:

William M. Hill.

Lyme.

John J. Burnham.

Montville—Uncasville:

*Morton E. Fox.

New London.

Abiel W. Nelson.
FRANCIS N. BRAMAN.
John G. Stanton.

*Exempted from taxation.

Charles B. Graves.
 Harold H. Heyer.
 Carlisle F. Ferrin.
 Thomas W. Rogers.
 J. Clifton Taylor.
 Patrick J. Cassidy.
 Harry M. Lee.
 Emanuel A. Henkle.
 *Edward C. Chipman.
 Gurdon S. Allyn.
 Daniel Sullivan.
 Joseph M. Ganey.

Norwich.

Lewis S. Paddock.
 William Witter.
 William S. C. Perkins.
 Patrick Cassidy.
LEONARD B. ALMY.
 Anthony Peck.
 Julian LaPierre.
 Edward P. Brewer.
 Newton P. Smith.
 Witter K. Tingley.
 William T. Browne.
 George R. Harris.
 Rush W. Kimball.
 James J. Donahue.
 Harvey E. Higgins.

Charles H. Perkins.
 Patrick H. Harriman.
 Dennis J. Shahan.
 John H. Evans.
 Charles F. Whitney.

Taftville:

George Thompson.
 Alphonse Fontaine.

Yantic:

Herbert H. Howe.

Stonington.

Charles E. Brayton.
 Norman L. Drake.
 George D. Stanton.

Mystic:

Frank A. Coates.

Old Mystic:

*Albert T. Chapman.
 William H. Gray.

Voluntown.

Warren R. Davis.

Waterford.

George M. Minor.

55

FAIRFIELD COUNTY.

William S. Randall, M.D., Shelton, President.

Edward M. Smith, M.D., Bridgeport, Vice-President.

Frank W. Stevens, M.D., Bridgeport, Secretary.

James D. Gold, M.D., Bridgeport, Treasurer.

Councilor — Gould A. Shelton, M.D., Shelton.

Censors — W. B. Cogswell, M.D., Frederick Schavoir, M.D.,
 William J. Tracey, M.D.

Annual Meeting, second Tuesday in April, at Bridgeport; semi-annual, second Tuesday in October.

Bridgeport.

Andrew J. Smith, No. 191 Barnum Avenue.
 GEORGE L. PORTER, No. 372 State Street.
 Robert Lauder, No. 310 Fairfield Avenue.
 N. E. WORDIN, 274 Fairfield Avenue.
 F. M. Wilson, Nos. 834-836 Myrtle Avenue.
 F. B. Downs, No. 906 Lafayette Street.
 J. W. Wright, Nos. 808-810-812 Myrtle Avenue.
 *A. A. Holmes, No. 991 Broad Street.
 Charles C. Godfrey, No. 340 State Street.
 S. M. Garlick, No. 474 State Street.
 Henry Blodget, No. 477 State Street.

*Exempted from taxation.

- J. C. Lynch, No. 408 State Street.
 C. C. Hoyt, No. 1289 State Street.
 G. W. Osborn, No. 888 Broad Street.
 J. R. Topping, No. 349 Noble Avenue.
 B. W. White, No. 390 State Street.
 Jacob May, No. 124 Courtland Street.
 F. C. Graves, No. 561 State Street.
 G. B. Cowell, No. 502 East Washington Avenue.
 George E. Ober, No. 355 East Main Street.
 D. C. DeWolfe, No. 516 Fairfield Avenue.
 Henry S. Miles, No. 417 State Street.
 Charles L. Banks, No. 306 West Avenue.
 Fessenden L. Day, No. 477 State Street.
 Edward Fitzgerald, No. 526 East Washington Avenue.
 George S. Ford, No. 527 State Street.
 Frank M. Tukey, No. 429 State Street.
 William W. Gray, No. 346 West Avenue.
 James D. Gold, No. 839 Myrtle Avenue.
 Reuben A. Lockhart, No. 760 Washington Avenue.
 Harriet A. Thompson, No. 695 Warren Street.
 Frederick J. Adams, No. 327 Fairfield Avenue.
 W. J. A. O'Hara, No. 361 Barnum Avenue.
 David M. Trecartin, No. 860 Park Avenue.
 Harry W. Fleck, No. 421 State Street.
 Thomas L. Ellis, No. 332 West Avenue.
 Charles R. Townsend, No. 346 State Street.
 Herbert E. Smyth, No. 376 John Street.
 Harry R. Bennett, No. 947 State Street.
 J. Murray Johnson, 385 State Street.
 Elmer F. Blank, No. 387 Noble Avenue.
 George M. DeLisser, No. 458 Noble Avenue.
 Irving L. Nettleton, No. 385 Noble Avenue.
 Richard W. Ivers, No. 313 State Street.
 Edwards M. Smith, 340 State Street.
 Frank L. Smith, No. 2178 Main Street.
 David B. Wason, No. 311 State Street.
 Thomas F. Stanton, No. 374 State Street.
 Edward Dorland Smith, No. 834 Myrtle Avenue.
 *Frank W. Stevens, No. 404 State Street.
 George Howell Warner, No. 429 State Street.
 Daniel Michael Driscoll, No. 467 State Street.
 Chester E. Blackman, No. 1119 Stratford Avenue.
 David H. Monahan, No. 1 Catherine Street.
 George F. Sheedy, No. 408 State Street.
 Henry E. Waterhouse, No. 430 State Street.
 Robert J. Lynch, No. 231 Fairfield Avenue.
 Charles J. Leverty, No. 469 State Street.
 Philip W. Bill, No. 534 Fairfield Avenue.
 Louis Smirnow, No. 295 East Main Street.
 Albert J. Roberts, No. 346 State Street.
 F. Winthrop Pyle, No. 808 Myrtle Avenue.
 Eli B. Ives, No. 469 State Street.
 Frank H. Coops, 411 State Street.

*Exempted from taxation.

Bethel.

A. E. Barber.
George DeWitt Wight.
Homer F. Moore.
Charles R. Hart.

Danbury.

F. P. Clark.
E. A. Stratton.
W. S. Watson.
D. Chester Brown.
H. F. Brownlee.
Nathaniel Selleck.
George E. Lemmer.
*Charles F. Craig, U. S. A.
John A. Wade.
William F. Gordon.
William T. Bronson.
Richard M. English.

Sandy Hook:

W. H. Kiernan.

Darien.

George H. Noxon.

Noroton:

M. W. Robinson.

Fairfield.

W. H. Donaldson.

Greenfield Hill:

M. V. B. Dunham.

Greens Farms:

David W. McFarland.

Southport:

Joseph L. Hetzel.
Robert E. Perdue.

Greenwich.

Frank Terry Brooks.
Fritz C. Hyde.
William L. Griswold.
Alvin W. Klein.
Lloyd O. Thompson.
John A. Clarke.
William Burke.
Leander P. Jones.
Harriet Baker Hyde.

Riverside:

Charles Smith.

Huntington—Shelton:

GOULD A. SHELTON.
William S. Randall.
Francis I. Nettleton.
Joseph G. Mahoney.

Monroe—Stepney:

SETH HILL.

New Canaan.

Clarence H. Scoville.
Myre J. Brooks.

Norwalk.

James G. Gregory.
R. L. Higgins.
S. H. Huntington.
William J. Tracey.
Arthur R. Turner.

South Norwalk:

A. N. Clark.
C. G. Bohannan.
Lauren M. Allen.
Henry C. Sherer.
Jean Dumortier.
Wright B. Bean.
Francis J. Burnell.

East Norwalk:

Frederick B. Baker.

Redding.

Ernest H. Smith.

Ridgefield.

Russell W. Lowe.
Howard P. Mansfield.

Stamford.

A. M. Hurlbut.
Samuel Pierson.
A. N. Phillips.
P. P. Van Vleet.
F. Schavoir.
William B. Treadway.
Rosavelle G. Philip.
James A. Meek.
George Sherrill.
Watson E. Rice.
Frank M. Tiffany.
Daniel A. Hanrahan.
George R. Hertzberg.
John J. Cloonan.

*Exempted from taxation.

Dean Foster.
John B. Griggs.
Donald R. MacLean.

Stratford.

W. B. Cogswell.
G. F. Lewis.

Weston—Lyon's Plains:
F. Gorham.

Westport.

F. Powers.
F. D. Ruland.
*L. H. Wheeler, U. S. A.
Stuart W. Sherwood.

Wilton.

A. B. Gorham.

146

WINDHAM COUNTY.

Robert C. White, M.D., Willimantic, President.

C. J. LeClair, M.D., Danielson, Vice-President.

James L. Gardner, M.D., Central Village, Secretary.

Councilor — Frank E. Guild, M.D., Windham.

Censors — C. N. Allen, M.D., James L. Gardner, M.D., George W. May, M.D.

Annual Meeting, Third Thursday in April.

Brooklyn—Wauregan:

*A. H. Tanner.

Danielson.

RIENZI ROBINSON.
W. H. Judson.
C. J. LeClair.
James R. Shannon.
George M. Burroughs.

Killingly.

Ashael E. Darling.
Henry L. Hammond.

East Killingly:

Charles E. Hill.

Moosup.

Charles N. Allen.
W. W. Adams.

Central Village:

*James L. Gardner.

Plainfield.

Arthur A. Chase.

Pomfret.

S. B. Overlock.

Putnam.

John B. Kent.

F. A. Morrell.
Omar LaRue.
Lewis O. Morasse.
Warren W. Foster.
Henry R. Lowe.
Marguerite J. Bullard.
Edward F. Perry.
Clarence E. Simmons.

Thompson.

Robert C. Paine.

North Grosvenor Dale:

J. F. McIntosh.
Emilien Rock.

Windham.

F. E. Guild.

Willimantic.

Frederick Rogers.
T. MORTON HILLS.
T. R. Parker.
John Weldon.
R. C. White.
George W. May.
Laura H. Hills.
Joseph A. Girouard.

Woodstock—East Woodstock:

Charles C. Gildersleeve.

36

*Exempted from taxation.

LITCHFIELD COUNTY.

George D. Ferguson, M.D., Thomaston, President.

Irving L. Hamant, M.D., Norfolk, Vice-President.

Salmon J. Howd, M.D., Winsted, Secretary.

Councilor — Edward H. Welch, M.D., West Winsted.

Censors. — N. S. Wadhams, M.D., W. S. Hulbert, M.D., H. D. Moore, M.D.

Annual Meeting, fourth Tuesday in April; semi-annual, second Tuesday in October.

Bethlehem.

Etta May Hadley-Judd.

Canaan—Falls Village:

Albert E. Cobb.

Francis S. Skiff.

Cornwall—West Cornwall:

Joseph Robinson.

Howard G. Stevens.

Goshen.

J. H. North.

Noah S. Wadhams.

Litchfield.

J. T. Sedgwick.

John L. Buel.

W. S. MacLaren.

Charles N. Warner.

Charles I. Page.

New Hartford.

Josiah Swett.

New Milford.

George E. Staub.

George H. Wright.

Norfolk.

John C. Kendall.

I. L. Hamant.

Lucius D. Bulkley.

Frederick S. Dennis.

North Canaan—Canaan:

Charles W. Camp.

Frank H. Lee.

John G. Adam.

Plymouth—Terryville:

W. W. Wellington.

A. V. Stoughton.

Salisbury.

Philip H. Sellew.

Lakeville:

William Bissell.

George H. Knight.

William B. Bissell.

Ernest R. Pike.

Sharon.

Clarence W. Bassett.

Jerome S. Chaffee.

Thomaston.

George D. Ferguson.

Robert Hazen.

Ralph S. Goodwin.

Torrington.

William L. Platt.

Thatcher S. Hanchett.

Elias Pratt.

J. W. Johnson.

Jerome S. Bissell.

James D. Hayes.

Abram J. Barker.

Charles H. Carlin.

*Sanford H. Wadhams.

H. D. Moore.

William J. Hogan.

Timothy M. Ryan.

Washington.

William J. Ford.

Watertown.

Ernest K. Loveland.

Winchester—Winsted:

Edward L. Pratt.

William S. Hulbert.

*Salmon J. Howd.

David D. Reidy.

Ernest R. Kelsey.

West Winsted:

Edward H. Welch.

William S. Richards.

Woodbury—Hotchkissville:

Egbert L. Smith.

William G. Reynolds.

*Exempted from taxation.

MIDDLESEX COUNTY.

Cushman A. Sears, M.D., Portland, President.

Charles B. Young, M.D., Middletown, Vice-President.

John E. Loveland, M.D., Middletown, Secretary.

Councilor. — Frank K. Hallock, M.D., Cromwell.

Censors. — S. W. Turner, M.D., C. H. Hubbard, M.D., M. C. Hazen, M.D.

Annual Meeting, second Thursday in April; semi-annual, second Thursday in October.

Chatham—Middle Haddam:

George N. Lawson.

East Hampton:

Albert Field.

Arthur H. Myers.

Chester.

*Sylvester W. Turner.

Fred Sumner Smith.

Clinton.

David Austin Fox.

Cromwell.

Frank K. Hallock.

Charles E. Bush.

East Haddam.

M. W. Plumstead.

Essex.

Charles H. Hubbard.

Frederick Barton Bradeen.

Frederick Stanley Cowles.

Edward Gould Rowland.

Haddam.

Miner C. Hazen.

Killingworth.

Edward P. Nichols.

Middletown.

William E. Fisher.

Charles E. Stanley.

Henry S. Noble.

Michael D. Murphy.

John E. Bailey.

Arthur J. Campbell.

Arthur B. Coleburn.

J. Francis Calef.

*John E. Loveland.

Kate C. Mead.

Daniel A. Nolan.

Allen Ross Diefendorf.

John H. Mountain.

Charles B. Young.

Jessie W. Fisher.

James T. Mitchell.

George Streit.

James Henry Kingman.

Thomas Patrick Walsh.

Leone Franklin LaPierre.

James Murphy.

Old Saybrook.

Calista V. Luther.

Irwin Grannis.

Portland.

Cushman A. Sears.

Frank E. Potter.

Dennis L. Glynn.

Saybrook—Deep River:

*Edwin Bidwell.

Howard T. French.

Arthur Pratt.

TOLLAND COUNTY.

Frederick W. Walsh, M.D., Rockville, President.

T. F. Rockwell, M.D., Rockville, Vice-President.

T. F. O'Laughlin, M.D., Rockville, Secretary.

Councilor. — C. B. Newton, M.D., Stafford Springs.

Censors — T. F. O'Laughlin, M.D., F. Gilnack, M.D., E. T. Davis, M.D.,

Annual Meeting, third Tuesday in April; semi-annual, third Tuesday in October.

*Exempted from taxation.

Coventry.

Isaac P. Fiske.

South Coventry:

W. L. Higgins.

Louis I. Mason.

Ellington.

E. T. Davis.

Hebron.

Cyrus H. Pendleton.

Cyrus E. Pendleton.

Mansfield—Mansfield Depot:

F. E. Johnson.

W. E. Cramm.

Rockville.

Frederick Gilnack.

T. F. Rockwell.

E. P. Flint.

*T. F. O'Laughlin.

Ernest O. Winship.

Dean C. Bangs.

Frederick W. Walsh.

Somers.

Alonzo L. Hurd.

Stafford—Stafford Springs:

C. B. NEWTON.

*F. L. Smith.

James Stretch.

Tolland.

William N. Simmonds.

Vernon.

*A. R. GOODRICH.

*Exempted from taxation.

**OFFICERS OF THE CONNECTICUT STATE MEDICAL SOCI-
ETY FROM ITS ORGANIZATION IN 1792 TO
THE PRESENT TIME.***

PRESIDENTS.

| | | | |
|-------|----------------------|------|----------------------|
| 1792 | Leverett Hubbard. | 1874 | Lowell Holbrook. |
| 1794 | Eneas Munson. | 1875 | Pliny A. Jewett. |
| 1801 | James Potter. | 1876 | Ashbel W. Barrows. |
| 1803 | Thomas Mosley. | 1877 | Robert Hubbard. |
| 1804 | Jeremiah West. | 1878 | Charles M. Carleton. |
| 1807 | John R. Watrous. | 1879 | Alfred R. Goodrich. |
| 1812 | Mason F. Cogswell. | 1880 | Gideon L. Platt. |
| 1822 | Thomas Hubbard. | 1881 | William Deming. |
| 1827 | Eli Todd. | 1882 | William G. Brownson. |
| 1829 | John S. Peters. | 1883 | Elisha B. Nye. |
| 1832 | William Buel. | 1884 | Benjamin N. Comings. |
| 1834 | Thomas Miner. | 1885 | Elijah C. Kinney. |
| 1837 | Silas Fuller. | 1886 | Thomas M. Hills. |
| 1841 | Elijah Middlebrook. | 1887 | Francis Bacon. |
| 1843 | Luther Ticknor. | 1888 | George L. Porter. |
| 1846 | Archibald Welch. | 1889 | Orlando Brown. |
| 1849 | George Sumner. | 1890 | Melancthon Storrs. |
| 1851 | Rufus Blakeman. | 1891 | Charles A. Lindsley. |
| 1853 | Richard Warner. | 1892 | Cyrus B. Newton. |
| 1854. | William H. Cogswell. | 1893 | Francis D. Edgerton. |
| 1856 | Benjamin H. Catlin. | 1894 | Francis N. Braman. |
| 1858 | Ashbel Woodward. | 1895 | Seth Hill. |
| 1861 | Josiah G. Beckwith. | 1896 | Rienzi Robinson. |
| 1863 | Ebenezer K. Hunt. | 1897 | Ralph S. Goodwin. |
| 1865 | Nathan B. Ives. | 1898 | Henry P. Stearns. |
| 1866 | Isaac G. Porter. | 1899 | Charles S. Rodman. |
| 1867 | Charles Woodward. | 1900 | Leonard B. Almy. |
| 1868 | Samuel B. Beresford. | 1901 | John H. Grannis. |
| 1869 | Henry Bronson. | 1902 | Gould A. Shelton. |
| 1870 | Charles F. Sumner. | 1903 | Samuel B. St. John. |
| 1871 | Gurdon W. Russell. | 1904 | William H. Carmalt. |
| 1872 | Henry W. Buel. | 1905 | Nathaniel E. Wordin. |
| 1873 | Ira Hutchinson. | 1906 | William L. Higgins. |

VICE-PRESIDENTS.

| | | | |
|------|--------------------|------|---------------------|
| 1792 | Eneas Munson. | 1814 | Thomas Hubbard. |
| 1794 | Elihu Tudor. | 1822 | Eli Todd. |
| 1796 | James Potter. | 1824 | Eli Ives. |
| 1801 | Thomas Mosley. | 1827 | John S. Peters. |
| 1803 | Jeremiah West. | 1829 | William Buel. |
| 1804 | Jared Potter. | 1832 | Thomas Miner. |
| 1806 | John R. Watrous. | 1834 | Silas Fuller. |
| 1807 | Mason F. Cogswell. | 1837 | Elijah Middlebrook. |
| 1812 | John Barker. | 1841 | Luther Ticknor. |
| 1813 | Timothy Hall. | 1843 | Archibald Welch. |

*Prepared for the Secretary by Dr. J. B. Lewis, Hartford.

1846 Dyer T. Brainard.
 1847 George Sumner.
 1849 Rufus Blakeman.
 1851 Richard Warner.
 1853 William H. Cogswell.
 1854 Benjamin H. Catlin.
 1856 Ashbel Woodward.
 1858 Josiah G. Beckwith.
 1861 Ebenezer K. Hunt.
 1863 Nathan B. Ives.
 1865 Isaac G. Porter.
 1866 Charles Woodward.
 1867 Samuel B. Beresford.
 1868 Henry Bronson.
 1869 Charles F. Sumner.
 1870 Gurdon W. Russell.
 1871 Henry W. Buel.
 1872 Ira Hutchinson.
 1873 Lowell Holbrook.
 1874 Pliny A. Jewett.
 1875 Ashbel W. Barrows.
 1876 Robert Hubbard.
 1877 Charles M. Carlton.
 1878 Alfred R. Goodrich.
 1879 Gideon L. Platt.
 1880 William Deming.
 1881 William G. Brownson.

1882 Elisha B. Nye.
 1883 Benjamin N. Comings.
 1884 Elijah C. Kinney.
 1885 Samuel Hutchins.
 1886 Francis Bacon.
 1887 George L. Porter.
 1888 Orlando Brown.
 1889 Charles J. Fox.
 1889 Charles A. Lindsley.
 1891 Cyrus B. Newton.
 1892 Francis D. Edgerton.
 1893 Francis N. Braman.
 1894 Seth Hill.
 1895 Rienzi Robinson.
 1896 Ralph S. Goodwin.
 1897 Henry P. Stearns.
 1898 Charles S. Rodman.
 1899 Leonard B. Almy.
 1900 John H. Grannis.
 1901 Gould A. Shelton.
 1902 Samuel B. St. John.
 1903 William H. Carmalt.
 1904 Edward H. Welch.
 1905 Frederick A. Morrell.
 1905 Eli P. Flint.
 1906 Samuel D. Gilbert.
 1906 Charles E. Brayton.

SECRETARIES.

1792 Jared Potter.
 1794 James Clark.
 1796 Daniel Sheldon.
 1798 Nathaniel Perry.
 1800 Samuel Woodward.
 1801 William Shelton.
 1805 John Barker.
 1810 Eli Ives.
 1813 Joseph Foot.
 1817 Jonathan Knight.
 1827 Samuel B. Woodward.
 1830 George Sumner.
 1832 Charles Hooker.

1838 Archibald Welch.
 1843 Ralph Farnsworth.
 1844 Worthington Hooker.
 1846 Gurdon W. Russell.
 1849 Josiah G. Beckwith.
 1858 Panet M. Hastings.
 1862 Leonard J. Sanford.
 1864 Moses C. White.
 1876 Charles W. Chamberlain.
 1883 Samuel B. St. John.
 1889 Nathaniel E. Wordin.
 1905 Walter R. Steiner.

TREASURERS.

1792 John Osborn.
 1793 Jeremiah West.
 1794 John Osborn.
 1796 Mason F. Cogswell.
 1800 William B. Hall.
 1808 Timothy Hall.
 1813 Richard Ely.
 1816 Thomas Miner.
 1817 John S. Peters.
 1827 William Buel.

1829 Joseph Palmer.
 1834 Elijah Middlebrook.
 1837 Luther Tichnor.
 1841 Virgil Maro Dow.
 1851 George O. Sumner.
 1863 James C. Jackson.
 1876 Francis D. Edgerton.
 1883 Erastus P. Swasey.
 1889 William W. Knight.
 1905 Joseph H. Townsend.

ALPHABETICAL LIST

OF THE

MEMBERS OF THE CONNECTICUT MEDICAL SOCIETY,

With Date and Place of Graduation, and Post-Office Address.

In preparing this list the Secretary has followed the list in the proceedings of 1892, made with great care and labor by Dr. J. B. Lewis for the Centennial year. It may be relied upon as being correct.

| | | |
|---------------------------------|-------------------------|----------------|
| Abrams, Alva Elnathan, | Albany, '81, | Hartford. |
| Adam, John Geikie, | Trinity, Tor., '00, | North Canaan. |
| Adams, Frederick Joseph, | Univ. N.Y., '95, | Bridgeport. |
| Adams, Henry Ely, | Yale, '02, | Hartford. |
| Adams, William Waldo, | Bellevue, '91, | Moosup. |
| Allen, Charles Noah, | Univ. Vt., '81, | Moosup. |
| Allen, Howard Oliver, | Univ. N.Y., '79, | Broad Brook. |
| Allen, Lauren Melville, | P. & S., N.Y., '80, | South Norwalk. |
| Allen, Millard Filmore, | Med. Chi., Phila., '95, | New Haven. |
| Alling, Arthur Nathaniel, B.A., | | |
| Yale, '86, | P. & S., N.Y., '91, | New Haven. |
| Allyn, Gurdon Spicer, | Univ. Pa., '03, | New London. |
| Almy, Leonard Ballou, B.A., | | |
| Yale, '73, | Bellevue, '76, | Norwich. |
| Alton, Charles De Lancey, | Bellevue, '75, | Hartford. |
| Anderson, Arvid, | Univ. Mich., '93, | New Britain. |
| Anderson, Henry Gray, | P. & S., N.Y., '89, | Waterbury. |
| Arnold, Ernest Hermann, | Yale, '94, | New Haven. |
| Atkinson, Edwin, | Univ. Vt., '93, | Niantic. |
| Atwater, Caleb Huntington, | P. & S., N.Y., '71, | Wallingford. |
| Axtelle, John Franklin, | L. I. Hosp. Coll., '71, | Hartford. |
| | | |
| Backus, Harold Simeon, | L. I. Hosp. Coll., '03, | Broad Brook. |
| Bacon, Francis, | Yale, '53, | New Haven. |
| Bacon, Leonard Woolsey, Jr., | | |
| B. A., Yale, '88, | Yale, '92, | New Haven. |
| Bailey, George Cornelius, | Univ. N.Y., '86, | Hartford. |
| Bailey, John Elmore, | P. & S., N.Y., '85, | Middletown. |
| Bailey, Michael Angelo, | P. & S., Balt., '93, | Hartford. |
| Ballard, Harry Emory, | Univ. Vt., '93, | Waterbury. |
| Baker, Frederick Birdseye, | Univ. Md., '88, | East Norwalk. |
| Bangs, Dean Cleveland, | Balt. Med. Col., '02, | Rockville. |
| Banks, Charles Lincoln, | P. & S., N.Y., '91, | Bridgeport. |
| Barber, Alvin Elizur, | Berkshire, '54, | Bethel. |
| Barber, Walter Lewis, | Bellevue, '73, | Waterbury. |
| Barker, Abram James, | Bellevue, '97, | Torrington. |
| Baribault, Arthur Octave, | Vict. Med. Col., '89, | New Haven. |
| Barnes, Lewis, B.A., M.A., | | |
| Yale, '47, | Buffalo, Univ., '50, | Oxford. |
| Barnes, Wm. Samuel, Ph.B., | | |
| Yale, '95, | Yale, '97, | New Haven. |

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|------------------------------------|--------------------------|----------------|
| Barnett, John Frederick, | Yale, '69, | West Haven. |
| Barrows, Benj. Safford, Ph.B., | | |
| Yale, '83, | Univ. N.Y., '87, | Hartford. |
| Bartlett, Charles Joseph, B.A., | | |
| Yale, '92; M.A., Yale, '94, | Yale, '95, | New Haven. |
| Bassett, Clarence Wheeler, | Univ. N.Y., '82, | Sharon. |
| Beach, Charles Coffing, Ph.B., | | |
| Yale, '77, | P. & S., N.Y., '82, | Hartford. |
| Beach, Charles Edward, | Yale, '88, | Milford. |
| Bean, William Hill, Ph.B., | | |
| Yale, '82, | Yale, '03, | New Haven. |
| Bean, Wright Butler, | P. & S., N. Y., '95, | South Norwalk. |
| Beckwith, Frank Edwin, M.A., | | |
| Yale, '81, | P. & S., N.Y., '71, | New Haven. |
| Beebe, George Hoxie, | Univ. N.Y., '78, | Guilford. |
| Bell, George Newton, | Yale, '92, | Hartford. |
| Bell, Newton Stephen, | Univ. Vt., '64, | Windsor. |
| Bellosa, Frederick, | Yale, '72, | New Haven. |
| Benedict, Frank Allen, | P. & S., N.Y., '87, | Seymour. |
| Benedict, John Mitchell, | Univ. N.Y., '82, | Waterbury. |
| Bennett, Harry Raymond, | Univ. Vt., '96, | Bridgeport. |
| Bercinsky, David, | Yale, '02, | New Haven. |
| Bergin, Thomas Joseph, A.B., | | |
| Yale, '96, | Yale, '99, | New Haven. |
| Bevan, Charles Ambrose, | Med. Chi., Chicago, '87, | West Haven. |
| Bidwell, Edwin, | Yale, '47, | Deep River. |
| Bidwell, Edwin Hamilton, | Dartmouth, '94, | North Haven. |
| Bill, Philip Worcester, Ph.B., | | |
| Yale, '97, | P. & S., N.Y., '01, | Bridgeport. |
| Bishop, Frederick Courtney, | | |
| B.A., Yale, '92, | Yale, '95, | New Haven. |
| Bishop, Louis Bennett, B.A., | | |
| Yale, '86, | Yale, '88, | New Haven. |
| Bishop, Timothy Huggins, | Yale, '60, | New Haven. |
| Bissell, Jerome Samuel, | Yale, '94, | Torrington. |
| Bissell, William, B.A., Yale, '53, | Yale, '56, | Lakeville. |
| Bissell, William Bascom, A.B., | | |
| Yale, '88, | P. & S., N.Y., '92, | Lakeville. |
| Blackman, Chester Eugene, | L. I. Hosp. Coll., '97, | Bridgeport. |
| Blanchard, Irving DeLoss, | Yale, '97, | Hartford. |
| Blank, Elmer Francis, | Starling, '97, | Bridgeport. |
| Blodget, Henry, A.B., Yale, '75, | Bellevue, '81, | Bridgeport. |
| Bohannon, Charles Gordon, | Univ. N.Y., '78, | South Norwalk. |
| Botsford, Charles Porter, | Yale, '94, | Hartford. |
| Boucher, John Bernard, | P. & S., Balt., '94, | Hartford. |
| Bracker, Arthur Stone, | Jefferson, '95, | Bristol. |
| Brackett, William Walker, | Jefferson, '96, | New Britain. |
| Bradeen, Frederick Barton, | Univ. Pa., '99, | Essex. |
| Bradley, Mark Spalding, | P. & S., N.Y., '92, | Hartford. |
| Bradstreet, Edward Thomas, | | |
| B.A., Yale, '74, | P. & S., N.Y., '77, | Meriden. |
| Brainard, Clifford Brewster, | | |
| Ph.B., Yale, '94, | Yale, '98, | Hartford. |
| Braman, Francis Nelson, | Bellevue, '66, | New London. |
| Brayton, Charles Erskine, | P. & S., N.Y., '73, | Stonington. |
| Brennan, Ambrose Kirk, | Yale, '93, | New Haven. |
| Brewer, Edward Pliny, Ph.D., | Dartmouth, '79, | Norwich. |

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| Bridge, John Law, B.S., Wesleyan, '88; Ph.D., Clark, '04, | Harvard, '03, | Thompsonville. |
| Bromley, Daniel Tyler, | Yale, '67, | Hartford. |
| Bronson, William Thaddeus, | Univ. N.Y., '98, | Danbury. |
| Brooks, Frank Terry, B.A., Yale, '90, | L. I. Hosp. Coll., '93, | Greenwich. |
| Brooks, Myre Joel, | Yale, '67, | New Canaan. |
| Brown, Charles Henry, | Univ. N.Y., '93, | Waterbury. |
| Brown, David Chester, | Yale, '84, | Danbury. |
| Browne, William Tyler, Ph.B., Yale, '78, | Harvard, '82, | Norwich. |
| Brownlee, Harris Fenton, | P. & S., N.Y., '88, | Danbury. |
| Buel, John Laidlaw, | P. & S., N.Y., '88, | Litchfield. |
| Bulkley, Lucius Duncan, A.B., Yale, '66; M.A., | P. & S., N.Y., '69, | Norfolk. |
| Bull, John Norris, | P. & S., N.Y., '78, | Plainville. |
| Bull, Thomas Marcus, | P. & S., N.Y., '87, | Naugatuck. |
| Bullard, Marguerite Jane, A.B., Cornell, '02, | Cornell Univ., '04, | Putnam. |
| Bunce, Philip Dibble, A.B., Yale, '88, | P. & S., N.Y., '91, | Hartford. |
| Bunnell, Wilbur Pitkin, | Univ. N.Y., '62, | New Britain. |
| Burke, William, | L. I. Hosp. Coll., '96, | Greenwich. |
| Burnell, Francis Edwin, | L. I. Hosp. Coll., '94, | South Norwalk. |
| Burnham, John Lewis, | Yale, '99, | Lyme. |
| Burr, Noah Arthur, | Yale, '01, | Manchester. |
| Burroughs, George McClellan, | Balt. Med. Coll., '00, | Danielson. |
| Bush, Charles Ellsworth, | Yale, '94, | Cromwell. |
| Butler, William James, | L. I. Hosp. Coll., '95, | New Haven. |
| Cahill, Joseph Henry, | Balt. Univ., '92, | Hartford. |
| Cahill, Thomas Matthew, | Yale, '88, | New Haven. |
| Caldwell, William Elry, | Balt. Med. Coll., '95, | West Suffield. |
| Calef, Jeremiah Francis, B.A., Wesleyan, '77, | Yale, '80, | Middletown. |
| Camp, Charles Welford, | Univ. N.Y., '74, | Canaan. |
| Campbell, Arthur Joseph, | P. & S., Balt., '85, | Middletown. |
| Carlin, Charles Henry, | Univ. Mich., '96, | Torrington. |
| Carlton, Philip Patrick, | Univ. N.Y., '90, | Hartford. |
| Carmalt, William Henry, M.A., Yale, '81, | P. & S., N.Y., '61, | New Haven. |
| Carrington, Charles, | P. & S., N.Y., '60, | Farmington. |
| Carrington, Henry Austen, | Harvard, '48, | Bristol. |
| Carroll, John James, | Dartmouth, '97, | Naugatuck. |
| Carver, John Preston, | Albany, '96, | Simsbury. |
| Cassidy, Patrick, | Univ. Vt., '65, | Norwich. |
| Cassidy, Patrick John, B.A., Yale, '94, | Johns Hopkins, '98, | New London. |
| Castle, Frank Edwin, | Yale, '70, | Waterbury. |
| Chaffee, Jerome Stuart, Ph.B., Yale, '94, | Univ. Pa., '97, | Sharon. |
| Chapman, Albert Taylor, | P. & S., N.Y., '64, | Old Mystic. |
| Chase, Arthur Alverdo, | Harvard, '01, | Plainfield. |
| Chatfield, Rollin Blackman, | Yale, '93, | Granby. |
| Cheney, Benjamin Austin, B.A., Yale, '88 | Yale, '90, | New Haven. |

- Chester, Thomas Weston, B.A.,
 Rutgers, '92, M.A., '95,
 Chipman, Edward Clifford,
 Chipman, Ernest Dwight,
 Clark, Arthur Norman,
 Clark, Franklin Pierce,
 Clark, Robert Moses,
 Clarke, John Alexander,
 Clary, George, A.B., Dartmouth,
 '52,
 Clifton, Harry Colman,
 Cloonan, John Joseph,
 Coates, Franklin Avery, A.B.,
 Brown, '72; A.M., '75,
 Cobb, Alfred Edward,
 Cochran, Levi Bennett,
 Cogswell, William Badger,
 Cohane, Timothy Francis,
 Coholan, Michael James,
 Coleburn, Arthur Burr,
 Conklin, James Henry,
 Converse, George Frederick,
 Coogan, Joseph Albert,
 Cook, Ansel Granville,
 Cooke, Joseph Anthony,
 Cooley, Myron Lynus,
 Cooper, Louis Edward, Ph.B.,
 Yale, '84,
 Coops, Frank Harvey, B.A.,
 Dalhousie, '88,
 Cowell, George B.,
 Cowles, Frederick Stanley,
 Cox, Ralph Benjamin,
 Coyle, William Joseph,
 Craig, Charles Franklin,
 Cramm, William Edward,
 Crane, Augustin Averill, B.A.,
 Yale, '85,
 Crary, David,
 Crossfield, Frederick Solon,
 Crothers, Thomas Davison,
 Crowe, Willis Hanford,
 Crowley, William Holmes,
 Curtiss, William Martin Stanley,
 Cushing, William Henry,
 Daggett, William Gibbons, B.A.,
 Yale, '80,
 Darling, Ashael Ebenezer,
 Dart, Frederick Howard,
 David, Adelard David,
 Davis, Charles Henry Stanley,
 Davis, Edwin Taylor,
 Davis, Elias Wyman, B.A.,
 Yale, '80,
 Davis, Gustav Pierpont, B.A.,
 Yale, '66,
 P. & S., N.Y., '95,
 P. & S., N.Y., '91,
 Yale, '97,
 P. & S., N.Y., '83,
 P. & S., N.Y., '76,
 Univ. Pa., '91,
 Bellevue, '97,
 Yale, '57,
 Univ. Pa., '01,
 P. & S., Balt., '97,
 P. & S., N.Y., '75,
 Yale, '98,
 Univ. Pa., '93,
 Bellevue, '81,
 Yale, '97,
 Univ. N.Y., '65,
 P. & S., N.Y., '90,
 Univ. Vt., '99,
 Yale, '87,
 Bellevue, '76,
 P. & S., N.Y., '87,
 Yale, '97,
 Buffalo Univ., '86,
 Yale, '86,
 P. & S., Balt., '96,
 P. & S., N.Y., '88,
 Yale, '93,
 McGill, '02,
 Buffalo Univ., '85,
 Yale, '94,
 Univ. Vt., '95,
 Yale, '87,
 Yale, '69,
 Bellevue, '78,
 Albany, '65,
 P. & S., N.Y., '95,
 Buffalo Univ., '90,
 Univ. Balt., '93,
 Bellevue, '92,
 Univ. Pa., '84,
 Harvard, '72,
 P. & S., N.Y., '84,
 Dartmouth, '89,
 Univ. N.Y., '66,
 Univ. Vt., '88,
 Yale, '92,
 P. & S., N.Y., '69,
 Hartford.
 New London.
 Waterbury.
 South Norwalk.
 Danbury.
 New Britain.
 Greenwich.
 New Britain.
 Hartford.
 Stamford.
 Mystic.
 Falls Village.
 Hartford.
 Stratford.
 New Haven.
 New Britain.
 Middletown.
 Hartford.
 New Haven.
 Windsor Locks.
 Hartford.
 Meriden.
 Waterbury.
 Ansonia.
 Bridgeport.
 Bridgeport.
 Essex.
 Collinsville.
 Windsor Locks.
 Danbury.
 Mansfield Center.
 Waterbury.
 Hartford.
 Hartford.
 Hartford.
 New Haven.
 Collinsville.
 Bristol.
 Southington.
 New Haven.
 Killingly.
 Niantic.
 Waterbury.
 Meriden.
 Ellington.
 Seymour.
 Hartford.

| | | |
|---------------------------------------------------------------------|--------------------------|------------------|
| Davis, Warren Russell, | Univ. Vt., '82, | Voluntown. |
| Davison, Luther Augustus, | Univ. N.Y., '82, | Hartford. |
| Day, Fessenden Lorenzo, B.A., Bates, '90, | Bellevue, '93, | Bridgeport. |
| Deane, Henry Augustus, | Dartmouth, '68, | South Windsor. |
| DeForest, Louis Shepard, B.A., Yale, '79; M.A. Yale, '91, | Univ. Jena, '85, | New Haven. |
| Delaney, William Joseph, | McGill Univ., '87, | Naugatuck. |
| Delesdernier, Horace William, | Univ. Vt., '85, | Meriden. |
| DeLisser, Glenwood Medcalf, | Wash. Univ., '97, | Bridgeport. |
| Denison, Charles Neilson, | L. I. Hosp. Coll., '93, | Cheshire. |
| Dennis, Frederic Shepard, B.A., Yale, '72; M.R.C.S., | Bellevue, '74, | Norfolk. |
| DeWolfe, Daniel Charles, | Univ. Vt., '86, | Bridgeport. |
| Dickerman, Wilton Elias, B.A., Amherst, '90, | Yale, '93, | Hartford. |
| Diefendorf, Allen Ross, B.A., Yale, '94, | Yale, '96, | Middletown. |
| Donahue, James Joseph, | P. & S., Balt., '96, | Norwich. |
| Donaldson, William Henry, | Univ. N.Y., '81, | Fairfield. |
| Douglass, Edmund Peaslee, | Univ. N.Y., '89, | Groton. |
| Dowd, Michael Joseph, | Balt. Med. Coll., '01, | Thompsonville. |
| Dowling, John Francis, | L. I. Hosp. Coll., '90, | Hartford. |
| Down, Edwin Augustus, | P. & S., N.Y., '87, | Hartford. |
| Downey, Roger Charles, | Univ. Vt., '92, | Middletown. |
| Downs, Frederick Bradley, | Univ. N.Y., '78, | Bridgeport. |
| Drake, Norman Lucie, | Univ. N.Y., '91, | Stonington. |
| Driscoll, Daniel Michael, | P. & S., N.Y., '00, | Bridgeport. |
| Dumortier, Jean, | Univ. Ghent, Belg., '89, | South Norwalk. |
| Dunham, Martin Van Buren, | Harvard, '67, | Greenfield Hill. |
| Dwyer, Patrick James, A.B., Fordham, '94, | Univ. N.Y., '97, | Waterbury. |
| Eggleston, Jeremiah Dewey, | P. & S., N.Y., '79, | Meriden. |
| Eliot, Gustavus, B.A., Yale, '77; A.M., Yale, '82, | P. & S., N.Y., '80, | New Haven. |
| Ellis, Thomas Long, B.A., Yale, '94, | Yale, '96, | Bridgeport. |
| Elmer, Oliver Edward, | P. & S., Balt., '94, | Hartford. |
| Emmet, Francis Arthur, | Yale, '02, | Hartford. |
| Enders, Thomas Burnham, | P. & S., N.Y., '91, | Hartford. |
| Engelke, Charles, | P. & S., N.Y., '02, | Waterbury. |
| English, Richard Matthew, | Yale, '98, | Danbury. |
| Ensign, Robert Eleazer, | Albany, '57, | Berlin. |
| Evans, John Henry, | P. & S., N.Y., '02, | Norwich. |
| Farrell, John Edward, | Univ. N.Y., '03, | Waterbury. |
| Felty, John Wellington, A.M., Emporia, Kan., '97, | Jefferson, '84, | Hartford. |
| Fenn, Ava Hamlin, | P. & S., Balt., '86, | Meriden. |
| Ferguson, George Dean, | Univ. N.Y., '79, | Thomaston. |
| Ferrin, Carlisle Franklin, B.A., Univ. Vt., '91, | P. & S., N.Y., '95, | New London. |
| Ferris, Harry Burr, B.A., Yale, '87, | Yale, '90, | New Haven. |
| Field, Albert, | L. I. Hosp. Coll., '67, | East Hampton. |
| Finch, George Terwilliger, B.A., Hobart, '75; M.A., Hobart, '78, | Bellevue, '77, | Thompsonville. |

| | | |
|---------------------------------------------------------|------------------------------------|-------------------|
| Fisher, Jessie Weston, | Women's Med Coll., Pa., '93, | Middletown. |
| Fisher, William Edwin, | Univ. Pa., '76, | Middletown. |
| Fiske, Isaac Parsons, | Univ. N.Y., '75, | Coventry. |
| Fitzgerald, Charles, | Univ. Vt., '98, | Hartford. |
| Fitzgerald, Edward, | P. & S., Balt., '84, | Bridgeport. |
| Fitzgerald, William, | Univ. Vt., '95, | Hartford. |
| Fleck, Harry Willard, | Jefferson, '96, | Bridgeport. |
| Fleischner, Henry, | Yale, '78, | New Haven. |
| Flint, Eli Percival, | Yale, '79, | Rockville. |
| Flynn, James Henry Joseph, | Yale, '95, | New Haven. |
| Fontaine, Alphonse, | Laval Univ., '92, | Norwich. |
| Foote, Charles Jenkins, B.A., Yale, '83, | Harvard, '87, | New Haven. |
| Ford, George Skiff, | Bellevue, '93, | Bridgeport. |
| Ford, William J., | Univ. N.Y., '84, | Washington. |
| Foster, Dean, M.A., Univ. Kan., | Yale, '99, | Stamford. |
| Foster, John Pierpont Codrington, B.A., Yale, '69, | Yale, '75, | New Haven. |
| Foster, Warren Woodend, | Harvard, '82, | Washington, D. C. |
| Fox, Charles James, | Univ. N. Y., '76, | Hartford. |
| Fox, David Austin, | Univ. & Belle., '02, | Clinton. |
| Fox, Edward Gager, | Univ. N.Y., '83, | Wethersfield. |
| Fox, Morton Earl, | L. I. Hosp. Coll., '03, | Uncasville. |
| French, Howard Truman, | P. & S., N.Y., '91, | Deep River. |
| Freney, John Daniel, | L. I. Hosp. Coll., '93, | Waterbury. |
| Froelich, Charles Edward, M.A., Copenhagen, '64, | Copenhagen, '70, | Hartford. |
| Fromen, Ernst Theodore, | Milwaukee Med. Col., '97, | New Britain. |
| Frost, Charles Warren Selah, | P. & S., N.Y., '80, | Waterbury. |
| Fuller, Horace Smith, B.A., Amherst, '58; A.M., '61, | P. & S., N.Y., '65, | Hartford. |
| Galvin, William, | Univ. Vt., '92, | Meriden. |
| Gandy, Raymond Reeves, | Univ. Pa., '99, | Colchester. |
| Ganey, Joseph Matthew, | P. & S., Balt., '04, | New London. |
| Gardner, James Lester, | Univ., Vt., '81, | Central Village. |
| Garlick, Samuel Middleton, B.A., Dart., '74, | Harvard, '77, | Bridgeport. |
| Gaylord, Charles Woodward, B.A., Yale, '70, | Yale, '72, | Branford. |
| Gilbert, Samuel Dutton, B.A., Yale, '69, | Yale, '71, | New Haven. |
| Gildersleeve, Charles Childs, | Yale, '96, | East Woodstock. |
| Gilliam, William S., | Univ. Pa., '88, | South Manchester. |
| Gill, Michael Henry, | Yale, '96, | Hartford. |
| Gillin, Charles Adelbert, | Univ. N.Y., '83, | Berlin. |
| Gilnack, Frederick, | P. & S., N.Y., '67, | Rockville. |
| Girouard, Joseph Arthur, | Balt. Med. Coll., '99, | Willimantic. |
| Gladwin, Ellen Hammond, | Women's Med. Coll., N. Y., '72, | Hartford. |
| Glynn, Dennis Lawrence, | Balt. Med. Coll., '02, | Middletown. |
| Godfrey, Charles Cartlidge, | Dartmouth, '83, | Bridgeport. |
| Gold, James Douglass, Ph.B., Yale, '88, | P. & S., '91, | Bridgeport. |
| Gompertz, Louis Michael, | Yale, '96, | New Haven. |

- Goodenough, Edward Winchester,
 B.A., Yale, '87, Yale, '93, Waterbury.
 Goodrich, Alfred Russell, Berkshire, '46, Vernon.
 Goodrich, Charles Augustus, B.S.,
 Mass. Ag. Coll., '93, P. & S., N.Y., '96, Hartford. *
 Goodrich, William Albert, Med. Chi. Phila., '02, Waterbury.
 Goodwin, Ralph Schuyler, Ph.B.,
 Yale, '90, P. & S., N.Y., '93, Thomaston.
 Goodyear, Robert Beardsley, Yale, '68, North Haven.
 Gordon, William Francis, L. I. Hosp. Coll., '96, Danbury.
 Gorham, Andrew Bennett, Yale, '79, Wilton.
 Gorham, Frank, Yale, '76, Lyon's Plain.
 Grannis, Irwin, Yale, '96, Saybrook.
 Graves, Charles Burr, B.A.,
 Yale, '82, Harvard, '86, New London.
 Graves, Frederick Chauncey, Univ. N.Y., '88, Bridgeport.
 Graves, Frederick George, Yale, '92, Waterbury.
 Gray, William Henry, P. & S., N.Y., '89, Old Mystic.
 Gray, William Wetmore, B.S.,
 Dickinson, '85, Bellevue, '90, Bridgeport.
 Gregory, James Glynn, B.A.,
 Yale, '65, P. & S., N.Y., '68, Norwalk.
 Griggs, John Baggs, Yale, '97, Stamford.
 Griswold, Frederick Pratt, P. & S., N.Y., '76, Meriden.
 Griswold, Julius Egbert, Univ. N.Y., '79, East Hartford.
 Griswold, William Loomis, Ph.B.,
 Yale, '81, P. & S., N.Y., '85, Greenwich.
 Guild, Frank Eugene, L. I. Hosp. Coll., '85, Windham.
 Hadley-Judd, Etta May, Women's Med. Coll.,
 Phila., '95, Bethlehem.
 Haire, Edward Aloysius, Univ. Balt., '98, Derby.
 Hall, Edward Dormenio, Harvard, '73, Meriden.
 Hall, Joseph Barnard, Yale, '92, Hartford.
 Hallock, Frank Kirkwood, A.B.,
 Wesleyan, '82; A.M., '85, P. & S., N.Y., '85, Cromwell.
 Hamant, Irving Louis, L. I. Hosp. Coll., '90, Norfolk.
 Hamilton, Charles Allen, Univ. Vt., '86, Waterbury.
 Hammond, Henry Louis, Ph.B.,
 Brown, '65, Harvard, '66, Killingly.
 Hammond, Samuel Mowbray,
 Ph.B., Yale, '93, Yale, '96, New Haven.
 Hanchett, Thatcher Swift, Bellevue, '64, Torrington.
 Hanrahan, Daniel Aloysius, Bellevue, '95, Stamford.
 Harriman, Patrick Henry, Univ. N.Y., '84, Norwich.
 Harris, George Robert, P. & S., N.Y., '85, Norwich.
 Hart, Charles Remington, P. & S., N.Y., '59, Bethel.
 Hartshorn, Willis Ellis, Ph.B.,
 '95, Colo. Coll., Univ. Minn., '98, New Haven.
 Hawkes, William Whitney, B.A.,
 Yale, '79, Yale, '81, New Haven.
 Hayes, Arthur Douglass, Dartmouth, '96, Hartford.
 Hayes, James Dermot, B.S.,
 Manhattan Coll., N. Y., Univ. N.Y., '94, Torrington.
 Hayes, John Frances, Univ. N.Y., '79, Waterbury.
 Hazen, Miner Comstock, Univ. Mich. '55, Haddam.
 Hazen, Robert, Univ. Vt., '98, Thomaston.

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| Heady, Elias Buel, | Yale, '72, | Milford. |
| Heery, Francis Patrick, | Yale, '98, | New Haven. |
| Hemingway, George Isaac, | Univ. Vt., '97, | New Haven. |
| Henkle, Emanuel Alexander, | Cornell, '99, | New London. |
| Henn, Louis David, | Univ. N.Y., '98, | New Britain. |
| Henrahan, Bernard Eliot, | Jefferson, '97, | New Haven. |
| Hertzberg, George Robert, | Dartmouth, '99, | Stamford. |
| Hetzel, Joseph Linn, | Bellevue, '91, | Southport. |
| Heublein, Arthur Carl, | P. & S., N.Y., '02, | Hartford. |
| Hewes, Frank William | Univ. Vt., '94, | Groton. |
| Heyer, Harold Hankinson, | Univ. N.Y., '87, | New London. |
| Higgins, Gould Shelton, | Yale, '01, | North Haven. |
| Higgins, Harry Eugene, | Univ. N.Y., '96, | Norwich. |
| Higgins, Royal Lacey, | Bellevue, '67, | Norwalk. |
| Higgins, William Lincoln, | Univ. N.Y., '90, | South Coventry. |
| Hill, Charles Edwin, B.A., | | |
| Yale, '76, | Harvard, '79, | East Killingly. |
| Hill, Seth, | Yale, '66, | Stepney. |
| Hill, William Martin, | Univ. Va., '97, | Noank. |
| Hills, Laura Heath, | Women's Med. Coll., Pa., | Willimantic. |
| Hills, Thomas Morton, | Yale, '63, | Willimantic. |
| Hogan, William John, | Yale, '98, | Torrington. |
| Holbrook, Charles Werden, | | |
| M.A., Amherst, '93, | Yale, '96, | East Haven. |
| Holmes, Arthur Almond, | Harvard, '65, | Bridgeport. |
| Holmes, George James, | Albany, '82, | New Britain. |
| Holroyd, Joseph Scripture, | P. & S., N.Y., '95, | Waterville. |
| Horton, William Wickham, | Univ. N.Y., '79, | Bristol. |
| Hotchkiss, Edward Alfred, | McGill, '04, | Collinsville. |
| Hotchkiss, Norton Royce, | Univ. Md., '91, | New Haven. |
| Houghton, Simon Willard, | Bellevue, '79, | Hazardville. |
| Howard, Arthur Wayland, | Univ. N. Y., '90, | Wethersfield. |
| Howard, John, | Dartmouth, '81, | Hartford. |
| Howd, Salmon Jennings, | Jefferson, '83, | Winsted. |
| Howe, Harmon George, | Univ. Vt., '73, | |
| | P. & S., N.Y., '75, | Hartford. |
| Howe, Herbert H., | Univ. Vt., '80, | Yantic. |
| Hoyt, Curtis Clark, | P. & S., N.Y., '87, | Bridgeport. |
| Hubbard, Charles Henry, | Yale, '60, | Essex. |
| Hugo, John George, | P. & S., Balt., '03, | New Haven. |
| Hulbert, William Sharon, | Univ. N.Y., '80, | Winsted. |
| Hungerford, Henry Edward, | Yale, '98, | Waterbury. |
| Huntington, Samuel Henry, | Yale, '76, | Norwalk. |
| Hurd, Alonzo L., B.S., Me., '82, | Univ. Vt., '91, | Somers. |
| Hurlbutt, Augustin Moen, B.A., | | |
| Yale, '76, | P. & S., N.Y., '79, | Stamford. |
| Hyde, Fritz Carleton, | Univ. Mich., '60, | Greenwich. |
| Hyde, Harriet Baker, | Univ., Mich., '00, | Greenwich. |
| Hynes, Thomas Vincent, | Yale, '00, | New Haven. |
| Ingalls, Phineas Henry, A.B., | | |
| Bowdoin, '77; A.M., Bow- | | |
| doin, '85, | P. & S., N.Y., '80, | Hartford. |
| Irving, Samuel Wellington, | Yale, '91, | New Britain. |
| Isham, Oliver Kingsley, | Univ. N.Y., '88, | Hartford. |
| Ivers, Richard William, | Balt. Med. Coll., '95, | Bridgeport. |
| Ives, Eli Butler, | Yale, '03, | Bridgeport. |

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| Jennings, George Herman, | L. I. Hosp. Coll., '75, | Jewett City. |
| Johnson, Edwin Hines, | Univ. Vt., '88, | Naugatuck. |
| Johnson, Frederick Eugene, | Univ. N.Y., '69, | Mansfield. |
| Johnson, John Murray, | L. I. Hosp. Coll., '95, | Bridgeport. |
| Johnson, John William, | P. & S., Balt., '93, | Torrington. |
| Johnson, Marcus Morton, Ph.B., Brown, '70, | Univ. N.Y., '77, | Hartford. |
| Jones, Daniel Albion, B.A., Yale, '84; D.M.D., Harvard, '89, | Yale, '92, | New Haven. |
| Jones, Leander Page, | N. Y., Hom. Med., | Greenwich. |
| Joslin, George Harvey, | Univ. Vt., '87, | Mt. Carmel. |
| Judson, Walter, B.A., Yale, '64; M.A., '97, | P. & S., N.Y., '70, | New Haven. |
| Judson, William Henry, | Jefferson, '78, | Danielson. |
| Kane, Thomas Francis, | Bellevue, '87, | Hartford. |
| Kellogg, Kenneth Evernghim, | P. & S., N.Y., '98, | New Britain. |
| Kelly, Michael J., | Balt. Med. Coll., '97, | Warehouse Point. |
| Kelsey, Ernest Russell, | Univ. Md., '01, | Winsted. |
| Kendall, John Calvin, B.A., Yale, '70, | P. & S., N.Y., '75, | Norfolk. |
| Keniston, James Mortimer, | Harvard, '71, | Hartford. |
| Kenna, William Matthew, Ph.B., Yale, '90, | Yale, '92, | New Haven. |
| Kennedy, Paul Bernard, | Bellevue, '96, | West Haven. |
| Kent, John Bryden, | Harvard, '60, | Putnam. |
| Kernan, Walter Henry, | Trinity, Toronto, '97, | Danbury. |
| Kilbourn, Clarence Leishman, | Yale, '97, | New Haven. |
| Kilbourn, Joseph Austin, | P. & S., Balt., '97, | Hartford. |
| Kimball, Rush Wilmot, A.B., Williams, '87, | L. I. Hosp. Coll., '90, | Norwich. |
| King, Howard Frost, | Albany, '99, | Windsor. |
| Kingman, James Henry, A.B., Yale, '82, | P. & S., N.Y., '85, | Middletown. |
| Kingsbury, William Sanford, | Yale, '96, | Glastonbury. |
| Kirby, Frank Alonzo, | Columbian Univ., Wash., D. C., '95, | New Haven. |
| Klein, Alvin Walter, | Cincin. Coll. Med. & Surg., '89, | Greenwich. |
| Klenke, Henry Frederick, | Univ. N.Y., '92, | New Haven. |
| Knight, George Henry, A.M., Yale, '98, | P. & S., N.Y., '86, | Lakeville. |
| Knight, William Ward, | Univ. N.Y., '76, | Hartford. |
| Kowalewski, Victor Alexander, B.A., Yale, '99, | Yale, '02, | West Haven. |
| Laden, Michael Richard, | Univ. N.Y., '98, | Hartford. |
| Lally, Thomas John, | Albany, '99, | Waterbury. |
| Lamb, Chauncey Stafford, | Buffalo Univ., '93, | New Haven. |
| Lambert, Benjamin Lott, | Univ. N.Y., '83, | New Haven. |
| Lampson, Edward Rutledge, A.B., Trintty, '91, | P. & S., N.Y., '96, | Hartford. |
| LaPierre, Julian, | Bellevue, '71, | Norwich. |
| LaPierre, Leone Franklin, | Yale, '01, | Middletown. |
| LaPoint, John William Henry, | Laval Univ., Montreal, '92, | Meriden. |
| LaRue, Omer, | Vict., Montreal, '71, | Putnam. |

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| Lauder, Robert, M.A., Wesleyan, | | |
| '89, | Yale, '71, | Bridgeport. |
| Law, Homer Lycurgus, | Jefferson, '69, | Hartford. |
| Lawrence, George Washington, | Yale, '90, | East Berlin. |
| Lawson, George Newton, B.A., | | |
| Yale, '90, | Yale, '92, | Middle Haddam. |
| Lawton, Franklin Lyman, Ph.B., | | |
| Yale, '90, | Yale, '93, | Hartford. |
| Lay, Walter Sidders, | Yale, '01, | Hamden. |
| LeClair, Charles Joseph, | Victoria, '87, | Danielson. |
| Lee, Frank Herbert, | Albany, '88, | Canaan. |
| Lee, Harry Moore, | Columbia, '98, | New London. |
| Lemmer, George Edward, | Bellevue, '85, | Danbury. |
| Leverty, Charles Joseph, | N.Y. Univ. & Belle., '01, | Bridgeport. |
| Lewis, Dwight Milton, B.A., | | |
| Yale, '97, | Johns Hopkins, '01, | New Haven. |
| Lewis, George Francis, B.A., '64, | Yale, '65, | Collinsville. |
| Lewis, George Frederick, B.A., | | |
| Trinity, '77, | Yale, '84, | Stratford. |
| Lewis, John Benjamin, | Univ. N.Y., '53, | Hartford. |
| Lindsley, Charles Purdy, Ph.B., | | |
| Yale, '75, | Yale, '78, | New Haven. |
| Littlejohn, Percy Duncan, | Yale, '97, | New Haven. |
| Lockhart, Reuben Arthur, | Yale, '91, | Bridgeport. |
| Loew, Harry Kalman, | P. & S., N.Y., '02, | Hartford. |
| Loomis, Francis Newton, B.A., | | |
| Yale, '81, | Yale, '83, | Derby. |
| Loveland, Ernest Kilburn, | Yale, '97, | Watertown. |
| Loveland, John Elijah, A.B., | | |
| Wesleyan, '89, | Harvard, '92, | Middletown. |
| Lowe, Henry Russell, | Dartmouth, '82, | Woodstock Valley. |
| Lowe, Russell Walter, | Univ. N.Y., '89, | Ridgefield. |
| Luby, John Francis, Ph.B., | | |
| Yale, '76, | P. & S., N.Y., '78, | New Haven. |
| Ludington, Nelson Amos, | Yale, '01, | New Haven. |
| Luther, Calista Vinton, | Women's Med. Coll., | |
| | Pa., '85, | Saybrook. |
| Lyman, David Russell, | Univ. Va., '99, | Wallingford. |
| Lynch, John Charles, | Univ. N.Y., '86, | Bridgeport. |
| Lynch, Robert Joseph, | Bellevue, '97, | Bridgeport. |
| Lyon, Edwin Bradbury, | Berkshire, '62, | New Britain. |
| MacLaren, William Stevenson, | P. & S., N.Y., '89, | Litchfield. |
| MacLean, Donald Robert, | Balt. Med. Coll., '01, | Stamford. |
| Maguire, Edward O'Reilly, | P. & S., N.Y., '98, | Derby. |
| Maher, James Stephen, Ph.B., | | |
| Yale, '92, | Yale, '96, | New Haven. |
| Maher, Stephen John, | Yale, '87, | New Haven. |
| Mahoney, Joseph George, | Yale, '03, | Shelton. |
| Mailhouse, Max, Ph.B., Yale, '76, | Yale, '78, | New Haven. |
| Maloney, Daniel Joseph, | Univ. N.Y., '96, | Waterbury. |
| Mansfield, Howard Parker, | L. I. Hosp. Coll., '93, | Ridgefield. |
| Mariani, Nicola, | Univ. Naples, '93, | New Haven. |
| Marsh, Arthur Washburn, | Univ. Vt., '82, | New Haven. |
| Mason, Louis Irving, | P. & S., N.Y., '91, | South Coventry. |
| Mathewson, Earl, | P. & S., N.Y., '79, | Durham. |
| May, George William, | Milwaukee, '95, | Willimantic. |

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| May, Jacob Rush, | Chicago, '76, | Bridgeport. |
| Mayberry, Franklin Hayden, | Univ. Vt., '85, | Burnside. |
| Mayer, Nathan, | Cincinnati, '57, | Hartford. |
| McCabe, Edward Michael, B.A., Manhattan, '83, | Yale, '87, | New Haven. |
| McCook, John Butler, | P. & S., N.Y., '94, | Hartford. |
| McDermott, Terence Stevens, | Yale, '98, | New Haven. |
| McDonald, Edward Walsh, | Univ. N.Y., '71, | Waterbury. |
| McDonnell, Ralph Augustine, B.A., Yale, '90, | Yale, '92, | New Haven. |
| McFarland, David Walter, | Univ. N.Y., '85, | Greens Farms. |
| McGaughey, James David, | Jefferson, '70, | Wallingford. |
| McIntosh, Edward Francis, | Yale, '97, | New Haven. |
| McIntosh, James Fabien, | Victoria, '87, | North Grosvenordale. |
| McKee, Frederick Lyman, | P. & S., N.Y., '99, | Hartford. |
| McKnight, Everett James, B.A., Yale, '76, | P. & S., N.Y., '79, | Hartford. |
| McLarney, Thomas Joseph, | P. & S., Balt., '97, | Waterbury. |
| McMaster, Gilbert Totten, | Jefferson, '98, | New Haven. |
| McNeil, Archibald, | Dartmouth, '96, | New Haven. |
| McNeil, Rollin, | Yale, '62, | New Haven. |
| Meade, Kate Campbell, | Women's Med. Coll., Phila., '88, | Middletown. |
| Meek, James Albert, | McGill Univ., '75, | Stamford. |
| Meeks, Harold Albert, | Bellevue, '90, | Meriden. |
| Meyers, Arthur Henry, | Med. Chi., Phila., '02, | East Hampton. |
| Miles, Henry Shillingford, Ph.G., N. Y., '88, | P. & S., N.Y., '91, | Bridgeport. |
| Miller, George Root, | P. & S., Balt., '86, | Hartford. |
| Miller, William Radley, | Albany, '98, | Southington. |
| Minor, George Maynard, | L. I. Hosp. Coll., '85, | Waterford. |
| Mitchell, James Thomas, | Univ. N.Y., '91, | Middletown. |
| Monagan, Charles Andrew, B.S., Trinity, '93, | Univ. Pa., '98, | Waterbury. |
| Monahan, David Henry, M.A., Manhattan, '83, | Dartmouth, '00, | Bridgeport. |
| Monahan, Joseph Bernard, | Dartmouth, '94, | New Haven. |
| Moody, Mary Blair, | Buffalo, '76, | New Haven. |
| Moore, Homer Franklin, | Wash. Univ. Mo., '98, | Bethel. |
| Moore, Howard Doolittle, | Bellevue, '97, | Torrington. |
| Morasse, Lewis Ovid, | Univ. Vict., '84, | Putnam. |
| Morgan, William Dennison, A.B., Trinity, '02, | P. & S., N.Y., '76, | Hartford. |
| Moriarty, James Ligouri, | Harvard, '96, | Waterbury. |
| Morrell, Frederick Augustus, B.A., Oberlin, '91; M.A., | L. I. Hosp. Coll., '85, | Putnam. |
| Moser, Oran Alexander, | Yale, '02, | Rocky Hill. |
| Moulton, Edward Seymour, B.A., Oberlin, '91, | Yale, '94, | New Haven. |
| Mountain, John Henry, | Jefferson, '96, | Middletown. |
| Mulcahy, Thomas Aloysius, | P. & S., N.Y., '01, | Hartford. |
| Munger, Carl Eugene, Ph.B., Yale, '80, | P. & S., N.Y., '83, | Waterbury. |
| Murphy, James, | Univ. Pa., '95, | Portland. |
| Murphy, Michael Daniel, | Bellevue, '84, | Middletown. |
| Murphy, Walter Graham, | Albany Med. Coll., '90, | East Hartford. |

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| Nadler, Alfred Goldstein, B.A., Yale, '93, | Yale, '96, | New Haven. |
| Naylor, James Henry, | Univ. Vt., '95, | Hartford. |
| Nelson, Abiel Ward, | Harvard, '61, | New London. |
| Nettleton, Francis Irving, Ph.B., Yale, '94, | Yale, '97, | Shelton. |
| Nettleton, Irving LaField, | L. I. Hosp. Coll., '98, | Bridgeport. |
| Newton, Cyrus Brownlie, | Yale, '56, | Stafford Springs. |
| Newton, Matthew Turner, | Yale, '51, | Suffield. |
| Nicholas, Edward Payson, A.B., Col. N. J., (Princeton), '48, | P. & S., N.Y., '52, | Killingworth. |
| A.M., '51, | N. Y. Med. Coll., '57, | Meriden. |
| Nickerson, Nehemiah, | Yale, '54, | New Haven. |
| Nicoll, John, | | |
| Noble, Henry Smith, A.B., Tufts, '69, LL.D., Tufts, '05, | P. & S., N.Y., '71, | Middletown. |
| Nolan, Daniel Andrew, Ph.G., Phil., '93, | Med. Chir., Phila., Tufts, '98, | Middletown. Wallingford. |
| North, Caroline, | L. I. Hosp. Coll., '73, | Goshen. |
| North, James Howard, | Yale, '03, | New Haven. |
| Notkins, Louis Adolph, | Balt. Med. Coll., '93, | Darien. |
| Noxon, George Henry, | Univ. Vt., '90, | Bridgeport. |
| Ober, George Eugene, | P. & S., Balt., '92, | East Hartford. |
| O'Connell, Thomas Smith, | | |
| O'Connor, Matthew Charles, A.B., St. Francis X., N. Y., '69, | P. & S., N.Y., '73, | New Haven. |
| O'Connor, Patrick Thomas, | Bellevue, '92, | Waterbury. |
| O'Flaherty, Ellen Pembroke, | Cornell, '01, | Hartford. |
| O'Hara, Bernard Augustine, | Bellevue, '82, | Waterbury. |
| O'Hara, William James Aloysius, | P. & S., Balt., '93, | Bridgeport. |
| O'Laughlin, Thomas Francis, | Univ. N.Y., '96, | Rockville. |
| Osborn, George Wakeman, B.A., Yale, '84, | P. & S., N.Y., '87, | Bridgeport. |
| Osborne, Oliver Thomas, | Yale, '84, | New Haven. |
| Otis, Samuel Dickinson, | Univ. N.Y., '77, | Meriden. |
| Outterson, Richard Ambrose, | Jefferson, '02, | Windsor Locks. |
| Overlock, Selden Barden, | Bellevue, '89, | Pomfret. |
| Owens, William Thomas, | Univ. Vt., '99, | Hartford. |
| Paddock, Lewis Sloat, M.A., | N. Y. Med. Coll., '54, | Norwich. |
| Page, Charles Ithamar, | P. & S., N.Y., '90, | Litchfield. |
| Paine, Robert Child, | Dartmouth, '00, | Thompson. |
| Pallman, Theodore Dominic, | Yale, '97, | New Haven. |
| Park, Charles Edwin, | Yale, '81, | New Haven. |
| Parker, Theodore Raymond, | Univ. N.Y., '80, | Willimantic. |
| Parmelee, George Luther, D.M.D., Harvard, '70, | L. I. Hosp. Coll., '69, | Hartford. |
| Parsons, Edward Field, A.B., Williams, '48, | P. & S., N.Y., '58, | Thompsonville. |
| Peck, Anthony, B.A., Hamilton, '72, | Univ. N.Y., '75, | Norwich. |
| Peck, Robert Ellsworth, Ph.B., Yale, '90, | Yale, '93, | New Haven. |
| Peckham, Lucy Creemęr, | Women's Med. Coll., Pa., '85, | New Haven. |
| Pendleton, Cyrus Henry, | Western Reserve, '60, | Hebron. |
| Pendleton, Cyrus Edmund, | Yale, '03, | Hebron. |

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| Perdue, Robert Ernest, | Starling, '92, | Southport. |
| Perkins, Charles Harris, | P. & S., N.Y., '91, | Norwich. |
| Perkins, William Sheldon Clark, | P. & S., N.Y., '60, | Norwich. |
| Perry, Edward Franklin, | L. I. Hosp. Coll., '97, | Putnam. |
| Phelps, Charles Dickinson, B.A., | | |
| Amherst, '89; M.A., Amherst, | | |
| '97, | P. & S., N.Y., '95, | West Haven. |
| Philip, Rosavelle Gardner, | Women's Med. Coll., | |
| | N. Y. Inf., '75, | Stamford. |
| Phillips, Alfred Noroton, | P. & S., N.Y., '83, | Stamford. |
| Pierce, Elbridge Worthington, | Univ. N.Y., '85, | Meriden. |
| Pierson, John Corbin, | Tufts, '03, | Hartford. |
| Pierson, Samuel, | P. & S., N.Y., '81, | Stamford. |
| Pike, Ernest Reginald, | Univ. Mich., '98, | Lakeville. |
| Pinney, Royal Watson, | P. & S., N.Y., '88, | Derby. |
| Pitman, Edwin Parker, B.A., | | |
| Dartmouth, '86, | Dartmouth, '91, | New Haven. |
| Platt, William Logan, | P. & S., N.Y., '81, | Torrington. |
| Plummer, Paul, | Univ. Vt., '94, | Collinsville. |
| Plumstead, Matthew Woodbury, | Jefferson, '87, | East Haddam. |
| Pomeroy, Nelson Asa, | P. & S., N.Y., '96, | Waterbury. |
| Poore, John Robinson, | Harvard, '94, | Waterbury. |
| Porter, George Elmer, B.S., | | |
| Dartmouth, '88, | Dartmouth, '91, | Warehouse Point. |
| Porter, George Loring, B.A., | | |
| Brown, '59, | Jefferson, '62, | Bridgeport. |
| Porter, Isaac Napoleon, B.A., | | |
| Lincoln Univ., '90, | Yale, '93, | New Haven. |
| Porter, William, Jr., | Chicago Med. Coll., '81, | Hartford. |
| Potter, Frank Edward, | P. & S., N.Y., '89, | Portland. |
| Powers, Frederick, | P. & S., N.Y., '70, | Westport. |
| Pratt, Arthur Milon, | Bellevue, '92, | Deep River. |
| Pratt, Edward Loomis, | Univ. N.Y., '84, | Winsted. |
| Pratt, Elias, | P. & S., N.Y., '87, | Torrington. |
| Purinton, Charles Oscar, Ph.B., | | |
| Yale, '97, | Yale, '00, | West Hartford. |
| Pyle, Francis Winthrop, A.B., | | |
| Yale, '97, | P. & S., N.Y., '02, | Bridgeport. |
| | | |
| Ramsay, Otto Gustaf, M.A., | Univ. Va., '90, | New Haven. |
| Yale, '01, Hon., | | |
| Rand, Richard Foster, Ph.B., | Johns Hopkins, '00, | New Haven. |
| Yale, '95, | | |
| Randall, William Sherman, Ph.B., | P. & S., N.Y., '86, | Shelton. |
| Yale, '83, | | |
| Rankin, Charles Goodrich, A.B., | Chicago Med. Coll., '86, | Glastonbury. |
| Williams, '84, A.M., '87, | Yale, '98, | Hartford. |
| Ray, Wyeth Elliott, | Univ. Vt., '94, | Thompsonville. |
| Reardon, Thomas Francis, | Univ. Md., '01, | New Britain. |
| Reeks, Thomas Eben, | Med. Chi., Phila., '99, | Winsted. |
| Reidy, David Dillon, | Yale, '97, | New Haven. |
| Reilly, Francis Henry, | Yale, '78, | New Haven. |
| Reilly, James Michael, | Balt. Med. Coll., '95, | Hartford. |
| Reinert, Emil Gustav, | Yale, '97, | Woodbury. |
| Reynolds, William George, | Univ. Mich., '72, | Stamford. |
| Rice, Watson Emmons, | Univ. N.Y., '89, | West Winsted. |
| Richards, William Spencer, | | |

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|-------------------------------------------------------------|-------------------------|----------------------|
| Ring, Henry Wilson, A.B., Bowdoin, '79; M.A., Bowdoin, '82, | Me. Med. Coll., '81, | New Haven. |
| Rising, Harry Breed, | Yale, '95, | South Glastonbury. |
| Rising, Henry Martin, | Yale, '68, | South Glastonbury. |
| Robbins, Charles Henry, | Balt. Med. Coll., '95, | New Haven. |
| Robbins, George Orrin, | Yale, '79, | Waterbury. |
| Robbins, James Watson, | Bellevue, '80, | Naugatuck. |
| Roberts, Albert Joseph, | Harvard, '02, | Bridgeport. |
| Roberts, Edward Kilbourne, | | |
| Ph.B., Yale, '78, | Yale, '80, | New Haven. |
| Robinson, Joseph, | P. & S., N.Y., '98, | West Cornwall. |
| Robinson, Myron Potter, | Yale, '95, | Windsor Locks. |
| Robinson, Myron Winslow, | Berkshire, '60, | Noroton. |
| Robinson, Paul Skiff, Ph.B., Yale, '89, | Yale, '91, | New Haven. |
| Robinson, Rienzi, | L. I. Hosp. Coll., '69, | Danielson. |
| Rock, Emilien, | Victoria, '89, | North Grosvenordale. |
| Rockwell, Thomas Francis, | Univ. N.Y., '81, | Rockville. |
| Rodman, Charles Shepard, | P. & S., N.Y., '68, | Waterbury. |
| Rogers, Frederick, | Univ. N.Y., '63, | Willimantic. |
| Rogers, Thomas Weaver, | P. & S., N.Y., '90, | New London. |
| Root, Edward King, | Univ. N.Y., '79, | Hartford. |
| Root, Joseph Edward, B.S., Boston Univ., '76, | P. & S., N.Y., '83, | Hartford. |
| Rose, John Henry, | Univ. N.Y., '92, | Hartford. |
| Rowland, Edward Gould, B.A., Oberlin, '99, | Balt. Med. Coll., '03, | Westbrook. |
| Rowley, Alfred Merriman, | Univ. Vt., '97, | New Haven. |
| Ruickoldt, Arthur, | Univ. Vt., '97, | Westport. |
| Rundlett, David Livingstone, | P. & S., N.Y., '89, | New Haven. |
| Russell, George Washington, | Bellevue, '96, | Waterbury. |
| Russell, Gurdon Wadsworth, | | |
| Trinity, B.A., '34; M.A., '37, | Yale, '37, | Hartford. |
| Russell, Thomas Hubbard, Ph.B., Yale, '72, | Yale, '75, | New Haven. |
| Russell, William Spencer, | Yale, '80, | Wallingford. |
| Ryan, Patrick Joseph, | Niagara, '98, | Hartford. |
| Ryan, Timothy Mayher, A.B., Loyola Coll., | Balt. Med., '02, | Torrington. |
| Sanford, Leonard Luther, B.A., Yale, '90, | Yale, '93, | New Haven. |
| Sanford, Ward Harding, | Balt. Med. Coll., '95, | New Haven. |
| Schavoir, Frederick, | P. & S., Balt., '87, | Stamford. |
| Scoville, Clarence Henry, | Balt. Med. Coll., '92, | New Canaan. |
| Sears, Cushman Allen, | Univ. N. Y., '62, | Portland. |
| Seaver, Jay Webber, B.A., Yale, '80, M.A., '93, | Yale, '85, | New Haven. |
| Sedgwick, James Theodore, | Univ. N.Y., '85, | Litchfield. |
| Segur, Gideon Cross, | P. & S., N.Y., '82, | Hartford. |
| Selleck, Nathaniel, | Univ. N.Y., '89, | Danbury. |
| Sellew, Philip Hamilton, | Jefferson, '90, | Salisbury. |
| Shanan, Denis Joseph, | Univ. Vt., '85, | Norwich. |
| Shannon, James Bernard, | Victoria, '89, | Danielson. |
| Sharpe, Elmer Thomas, | Univ. N.Y., '95, | Derby. |
| Sheedy, George Francis, Ph.B., Yale, '99, | Yale, '02, | Bridgeport. |

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| Sheehan, William Joseph, B.S., Manhattan Coll., '92, | Yale, '95, | New Haven. |
| Shelton, Gould Abijah, M.A., Yale, '91, | Yale, '69, | Shelton. |
| Shepard, Durell, | Yale, '64, | West Haven. |
| Shepard, John McIntosh, | Univ. N.Y., '90, | Madison. |
| Shepherd, George Rubens, | Yale, '66, | Hartford. |
| Sherer, Henry Clifford, | Univ. N.Y., '92, | South Norwalk. |
| Sherrill, George, | P. & S., '91, | Stamford. |
| Sherwood, Stuart Wakeman, | Univ. Pa., '02, | Westport. |
| Simmons, Willard Nelson, | Univ. Vt., '89, | Tolland. |
| Simonds, Clarence Eugene, | Univ. N.Y., '97, | Willimantic. |
| Simpson, Frederick Thomas, B.A., Yale, '79, | Me. Med. Coll., '84, | Hartford. |
| Skiff, Francis Sands, | Univ. N.Y., '88 | Falls Village. |
| Skinner, Clarence Edward, LL.D., Rutherford, N.C., '00, | Yale, '91, | New Haven. |
| Skinner, Leander Zebinah, | Balt. Med. Coll., '94, | Windsor. |
| Slattery, Morris Dove, | Yale, '93, | New Haven. |
| Sleeper, George Everest, | Dartmouth, '95, | Hartford. |
| Sloan, Thomas George, | P. & S., N.Y., '99, | East Manchester. |
| Smirnow, Louis Mair, | Yale, '95, | Bridgeport. |
| Smith, Andrew Jackson, | P. & S., N.Y., '63, | Bridgeport. |
| Smith, Charles, | L. I. Hosp. Coll., '90, | Riverside. |
| Smith, Edward Dorland, A.B., Yale, '96, | Yale, '99, | Bridgeport. |
| Smith, Earl Terry, | Yale, '97, | Hartford. |
| Smith, Edwards Montrose, | P. & S., N.Y., '82, | Bridgeport. |
| Smith, Edward Weir, A.B., Yale, '78, | McGill, Mont., '82, | Meriden. |
| Smith, Ernest Herman, A.B., Amherst, '85, | P. & S., N.Y., '89, | Redding. |
| Smith, Frank Lewis, | Univ. N.Y., '75, | Stafford Springs. |
| Smith, Frank Llewellyn, | Albany, '83, | Bridgeport. |
| Smith, Frederick Sumner, B.A., Yale, '79, | Yale, '82, | Chester. |
| Smith, Herbert Eugene, Ph.B., Yale, '79, | Univ. Pa., '82, | New Haven. |
| Smith, Henry Hubert, | Jefferson, '77, | New Haven. |
| Smith, Howard Franklin, B.A., Yale, '94, | Yale, '96, | Hartford. |
| Smith, Marvin, | Univ. N.Y., '83, | New Haven. |
| Smith, Newton Phineas, | P. & S., N.Y., '82, | Norwich. |
| Smith, Oliver Cotton, | L. I. Hosp. Coll., '83, | Hartford. |
| Smyth, Herbert Edmund, | McGill Univ., '84, | Bridgeport. |
| Snow, Frank Simeon, | Albany, '89, | Hartford. |
| Sperry, Frederick Noyes, | Yale, '94, | New Haven. |
| Spier, Seymour Leopold, | Yale, '04, | New Haven. |
| Sprenger, William, | Univ. Vt., '91, | New Haven. |
| Spring, Frederick, | Univ. N.Y., '85, | Naugatuck. |
| Standish, James Herbert, | Univ. N.Y., '95, | Hartford. |
| Stanley, Charles Everett, | Univ. Pa., '76, | Middletown. |
| Stanton, George Dallas, | Bellevue, '65, | Stonington. |
| Stanton, John Gilman, B.A., Amherst, '70, | Wurtzburg, '73, | New London. |
| Stanton, Thomas Francis, | P. & S., Balt., '96, | Bridgeport. |

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| Starr, Robert Lytton, B.A., Trinity, '97, M.A., '00, | P. & S., N.Y., '01, | Hartford. |
| Staub, George Edwards, | L. I. Hosp. Coll., '93, | New Milford. |
| Steadman, Willard George, | Bellevue, '74, | Southington. |
| Steele, Henry Merriman, Ph.B., Yale, '94, | Johns Hopkins, '02, | New Haven. |
| Steiner, Walter Ralph, A.B., Yale, '92, M.A., Yale, '95, | Johns Hopkins, '98, | Hartford. |
| Stetson, James Ebenezer, | Yale, '81, | New Haven. |
| Stevens, Frank William, | Yale, '00, | Bridgeport. |
| Stevens, Howard Granson, | Balt. Med. Coll., '04, | Cornwall. |
| St. John, Samuel Benedict, B.A., Yale, '66, | P. & S., N.Y., '75, | Hartford. |
| Stockwell, William Myron, | Univ. Pa., '04, | Suffield. |
| Stoll, Henry Farnum, | P. & S., N.Y., '02, | Hartford. |
| Stone, Jay Stephen, | P. & S., N.Y., '65, | New Britain. |
| Storrs, Eckley Raynor, | Jefferson, '90, | Hartford. |
| Stoughton, Arthur Volney, B.A., Pomona, Calif., | Univ. Ohio, '98, | Terryville. |
| Stratton, Edward Augustus, | Univ. N.Y., '83, | Danbury. |
| Street, Philo William, | Univ. Vt., '92, | Suffield. |
| Stretch, James, | Univ. Coll., Richmond, Va., '02, | Stafford Springs. |
| Strosser, Herman, | Univ. Berlin, '84, | New Britain. |
| Sullivan, Daniel, | Univ. N.Y., '97, | New London. |
| Sullivan, Daniel Francis, A.B., Niagara Univ., '89, | Niagara Univ., '91, | Hartford. |
| Sullivan, John Francis, B.A., Yale, '90, | P. & S., N.Y., '94, | New Haven. |
| Swain, Henry Lawrence, | Yale, '84, | New Haven. |
| Swasey, Erastus Perry, | P. & S., N.Y., '69, | New Britain. |
| Swett, Josiah, | Univ. Vt., '78, | New Hartford. |
| Swett, Paul Plummer, | Univ. N.Y., '04, | Hartford. |
| Taft, Charles Ezra, | Harvard, '86, | Hartford. |
| Tanner, Alfred Herbert, | Bellevue, '74, | Brooklyn. |
| Taylor, John Clifton, | Univ. Mich., '91, | New London. |
| Teele, Julia Ernestine, A.B., Tabor, '85, | Women's Med. Coll., Pa., '88, | New Haven. |
| Tenney, Arthur John, Ph.B., Yale, '77, | Yale, '83, | Branford. |
| Thibault, Louis Joseph, | Yale, '00, | Waterbury. |
| Thompson, George, | Me. Med. Coll., '89, | Taftville. |
| Thompson, Emma Jane, | Women's Med. Coll., N.Y., Inf., '96, | Hartford. |
| Thompson, Harriet Adaline, | Women's Med. Coll., Pa., '93, | Bridgeport. |
| Thompson, Lloyd Orrin, | Dartmouth, '92, | Greenwich. |
| Tiffany, Frank Monroe, A.B., Amherst, '91, | Univ. Pa., '96, | Stamford. |
| Tingley, Witter Kinney, | Bellevue, '86, | Norwich. |
| Tinker, William Richard, | Univ. N.Y., '80, | South Manchester. |
| Topping, Jacob Reed, | Univ. N.Y., '82, | Bridgeport. |
| Townsend, Charles Rodman, | Albany, '95, | Bridgeport. |
| Townsend, George Hodgson, | Bellevue, '93, | Stony Creek. |
| Townsend, Jos. Hendley, B.A., Yale, '85, | Yale, '87, | New Haven. |

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| Tracey, William Joseph, | Univ. N.Y., '89, | Norwalk. |
| Tracy, Andrew William, | McGill, Mont., '73, | Meriden. |
| Travis, Catherine Hutchison, | Johns Hopkins, '03, | New Britain. |
| Treadway, William Buckingham, | Univ. Mich., '83, | Stamford. |
| Trecartin, David Munson, | Dartmouth, '94, | Bridgeport. |
| Tudor, Mary Starr, | Women's Med. Coll., Pa., '93. | South Windsor. |
| Tukey, Frank Martin, B.A., Bowdoin, '91, | Harvard, '91 | Bridgeport. |
| Turner, Arthur Robert, A.B., Amherst, '84, | Univ. Paris, '94, | Norwalk. |
| Turner, Sylvester Wooster, B.A., Yale, '42, | Yale, '46, | Chester. |
| Tuttle, Albert Lake, | Albany, '88, | Milford. |
| Tuttle, Charles Alling, Ph.B., Yale, '88, | Yale, '91, | New Haven. |
| Tyler, Jr., Heman Augustin, | Yale, '98, | Hartford. |
| VanStrander, William Harold, | Univ. Vt., '00, | Hartford. |
| Van Vleet, Peter P., | Bellevue, '69, | Stamford. |
| Varno, Henry George, | P. & S., Balt., '82, | Thompsonville. |
| Verdi, William Francis, | Yale, '94, | New Haven. |
| VonTobel, Albert Eugene, B.A., Yale, '96, | Yale, '99, | Meriden. |
| Wade, John Alexander, | Bellevue, '93, | Danbury. |
| Wadhams, Sanford Hosea, | Yale, '96, | Torrington. |
| Wadhams, Noah Samuel, Ph.B., Yale, '97, | Yale, '00, | Goshen. |
| Waite, Frank Louis, | Bellevue, '88, | Hartford. |
| Walsh, Frederick William, | P. & S., Balt., '85, | Rockville. |
| Walsh, Thomas Patrick, | Univ. Vt., '02, | Middletown. |
| Warner, Charles Norton, | Jefferson, '96, | Litchfield. |
| Warner, George Howell, | Yale, '97, | Bridgeport. |
| Wason, David Boughton, | P. & S., N.Y., '00, | Bridgeport. |
| Waterhouse, Henry Edwin, | P. & S., N.Y., '02, | Bridgeport. |
| Waters, John Bradford, | Univ. Vt., '90, | Hartford. |
| Watson, William Seymour, | L. I. Hosp. Coll., '87, | Danbury. |
| Weaver, William Myron, | Yale, '97, | Hartford. |
| Weidner, Calvin, | Univ. Ind., '93, | Manchester. |
| Weir, Janet Marshall, | Queen's Univ. Kings- ton, Ont., '91, | Hartford. |
| Welch, Edward Hubbard, | Yale, '76, | West Winsted. |
| Welch, George Kellogg, | P. & S., N.Y., '78, | Hartford. |
| Welch, Harry Little, A.B., Yale, '94, | Yale, '97, | New Haven. |
| Welch, William Collins, | Yale, '77, | New Haven. |
| Weldon, John, | Univ. N.Y., '83, | Willimantic. |
| Weldon, Thomas Henry, | Univ. N.Y., '83, | South Manchester. |
| Wellington, William Winthrop, | Univ. Vt., '89, | Terryville. |
| Wells, Ernest Alden, A.B., Yale, '97, | Johns Hopkins, '01, | Hartford. |
| West, Redfield B., | Univ. N.Y., '79, | Guilford. |
| Wheatley, Louis Frederick, | Tufts, '03, | Meriden. |
| Wheeler, Franklin, B.A., Yale, '47; M.A., Yale, '67, | P. & S., N.Y., '52, | Farmington. |
| Wheeler, Frank Henry, B.A., Yale, '80, | Yale, '82, | New Haven. |

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| Wheeler, Lewis Hawley, | Yale, '97, | Westport. |
| White, Benjamin Walker, | L. I. Hosp. Coll., '86, | Bridgeport. |
| White, Robert Creighton, | Univ. Vt., '89, | Willimantic. |
| Whitney, Charles Flagg, | Univ. Vt., '03, | Norwich. |
| Whiton, Francis Henry, | Dartmouth, '72, | Manchester. |
| Whittemore, Edw. Lancaster, | | |
| Ph.B., Yale, '92, | Univ. Va., '94, | New Britain. |
| Whittemore, Edward Reed, A.B., | | |
| Yale, '98, | P. & S., N.Y., '02, | New Haven. |
| Whittemore, Frank Hamilton, | Bellevue, '74, | New Haven. |
| Wight, George DeWitt, | Bellevue, '87, | Bethel. |
| Willard, Frederick Buell, | Univ. Vt., '00, | Hartford. |
| Williams, Marian Walker, A.B., | | |
| Radcliffe, '97, | Johns Hopkins, '01, | Hartford. |
| Williams, Allen Hamilton, A.B., | | |
| Harvard, '91, | Harvard, '01, | Hartford. |
| Wilmot, Louis Howard, | Univ. N.Y., '91, | Ansonia. |
| Wilson, Frederick Morse, A.B., | | |
| Colby, '71, | Harvard, '75, | Bridgeport. |
| Wilson, William Patrick, | P. & S., Balt., '90, | Wallingford. |
| Wilson, William Virgil, | Yale, '67, | West Haven. |
| Winchell, Alverd Ezra, A.B., | | |
| Wesleyan, '57, | P. & S., N.Y., '65, | New Haven. |
| Winne, William Nelson, | Univ. N.Y., '97, | New Haven. |
| Winship, Ernest Oliver, | Univ. Vt., '00, | Rockville. |
| Witter, Orrin Russell, | P. & S., N.Y., '01, | Hartford. |
| Witter, William, | Yale, '65, | Norwich. |
| Wolff, Arthur Jacob, | Tex. Med. Coll., '76, | |
| | Bellevue, '83, | Hartford. |
| | Univ. N.Y., '79, | Tariffville. |
| Wooster, Charles Morris, | | |
| Wordin, Nathaniel Eugene, B.A., | Jefferson, '73, | Bridgeport. |
| Yale, '70; M.A., Yale, '72, | Bellevue, '80, | New Haven. |
| Wright, Frank Walden, | P. & S., N.Y., '94, | New Milford. |
| Wright, George Herman, | | |
| Wright, John Winthrop, A.B., | Univ. N.Y., '80, | Bridgeport. |
| Amherst, '77, | Univ. N.Y., '65, | New Britain. |
| Wright, Theodore Goodelle, | | |
| Wurtenberg, William Charles, | Yale, '93, | New Haven. |
| Ph.B., Yale, '89, | | |
| Young, Charles Bellamy, | P. & S., N.Y., '94, | Middletown. |

Members noticing any errors or omissions in any part of this record will please inform the Secretary for correction in future lists.

